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Community Based Ecotourism Development as a Viable Strategy for Sustainable Natural Resource Management: Opportunities and Challenges. The Case of Borena-Saynt Park: South Wollo, Ethiopia.

By

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Declaration

This is to certify that this thesis entitled "***Community Based Ecotourism Development as a Viable Strategy for Sustainable Natural Resource Management: Opportunities and Challenges. The case of Borena-Saynt Park: South Wollo, Ethiopia***" submitted in partial fulfillment of the requirements for the award of the degree of MA., in Development Studies to the College of Business and Economics, Mekelle University, through the Department of Management, done by Mr. ***Amogne Asfaw Eshetu***, Id.No.**FBE/*PR/0005/00*** is an authentic work carried out by him under my guidance. The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief.

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ACRONYMS AND OPERATIONAL TERMS

Wereda	Division of zone
Kebelle	Division of Wereda (its subdivision is village)
Elders	Persons living near to the park with age of 60 years old and above
ANRS	Amhara National Regional State
BWFEDO	Borena Wereda Finance and Economic Development Office
DAs	Development Agents
EPAE	Environmental Protection Authority of Ethiopia
EPRDF	Ethiopian Peoples' Revolutionary Democratic Front
ETC	Ethiopian Tourism Commission
FGD	Focus Group Discussion
GDP	Gross Domestic Product
IUCN	International Union for Conservation of Nature
LDCs	Least Developed Countries
MDGs	Millennium Development Goals
MoFED	Minister of Finance and Economic Development
NAP	National Action Program
PaDPA	Parks Development and Protection Authority
PASDEP	A Plan for Accelerated and Sustained Development to End Poverty
SNRM	Sustainable Natural Resource Management
UN	United Nations
UNAID	United States Agency for International Development
UNCED	United Nations Conference on Environment and Development
UNCCD	United Nations Convention to Combat Desertification
UNESCO	United Nations Economic and Social Council Organization
WIC	Walta Information Center
WTO	World Tourism Organization
WTTC	World Travel and Tourism Council

ABSTRACT

Ethiopia has faced rapid deforestation and land degradation that is a cumulative outcome of extensive forest clearing for agricultural use, overgrazing, exploitation of forests for fuel wood, fodder and construction materials, setting of fire to create pasture land, expansion of settlements etc. Ecotourism development is, nowadays, increasingly used for its multipurpose. By promoting ecotourism through the protection of the environment, biodiversity is preserved, jobs are created, market for local products is created, environmental education within the communities is promoted, and understanding of local peoples and cultures are fostered among the tourists who visit these communities. The prime objective of this research was to assess the potential (opportunities) of Borena-Saynt Park for the development of community-based ecotourism that enables to sustainable natural resource management and to identify the main problems (challenges) related to the management of the resource as well as development of ecotourism using descriptive survey type of research. To that end, information was collected and analyzed from 160 household heads living around the park using structured questionnaire; interview was undertaken with 5 volunteer elders; focus group discussions were conducted with key informants; and direct field observation was undertaken. The findings of this research revealed that, a combination of wonderful scenery, diversified wildlife and plant species, amazing caves and culture of the local community makes Borena-Saynt Park potentially rich for the development of ecotourism. Land degradation, shortage of animal forage and grazing land, low fertility of the soil, scarcity of cultivable land and absences of off-farm activities are among the critical socio-economic problems of the local community that pose pressure on the park. Development of ecotourism program, diversifying the livelihood of the local community, introducing alternative sources of energy, launching afforestation on the buffer zone, animal forage development will help for sustainable natural resource management of the park by improving the well-being of the local community.

Key terms: eco/tourism, community based ecotourism, ecotourism resources, sustainable natural resource management, land degradation, deforestation, afforestation, local community participation

CHAPTER 1: INTRODUCTION

1.1 Background of the Study

The tourism sector is one of the fastest growing industries in the world (Neto, 2002:1). For many countries it is seen as a main instrument for regional development since it stimulates new economic activities. Tourism has a positive economic impact on the balance of payment, employment, Gross Domestic Product (GDP) and it helps to reduce poverty. The sector serves more than 613 million people each year, employs more than 260 million people and accounts for 11% of global GDP (Creaco, 2003; Rodger, 2005).

As it was stated by United Nations World Tourism Organization (UNWTO) (2006), cited by Fayissa (2007), world wide tourism grew from 25 million arrivals in 1995 to 808 million in 2005, with an average annual growth rate of 6.5 per cent. The growth in the number of international travelers, according to Rodger (2005), has been largely facilitated by increased income and leisure time, together with rapid and dramatic improvements in communications and transport technologies, which have raised public awareness of the diversity of cultures and landscapes that exist in the world, made these destinations much more readily accessible. But the situation in Africa has been very low. In 2005 for example, tourist arrivals in Africa registered only 37 million (or only 5% of the world arrivals), as compared to 444 million arrivals (55%) in Europe, 156 million arrivals (19%) in Asia, 133 million arrivals (16%) in America and 38 million arrivals (5%) in the Middle East. On the other hand, while tourism generates a significant amount of foreign exchange earning that also contributes to the economic growth of developed countries; such ingredient of growth has not been effectively harnessed in Africa. For instance, in the year 2005, Africa received only $18.3 billion (2.9%) from $623 billion world wide while the share of Europe was $326.7 billion (52.5%) (Chernet, 2008). According to World Travel and Tourism Council (WTTC), the contribution of travel and tourism in the year 2006 in terms of Gross Domestic Product (GDP) for Tanzania, Kenya, Sudan, Madagascar and Ethiopia was 16%,

8.8%, 7.1%, 6.3%, and 5.5% respectively. In the same year, travel and tourism accounted 7.1%, 7.1%, 5.8%, 5.8%, and 5.1% out of the total employment for Tanzania, Kenya, Sudan, Ethiopia and Madagascar respectively (www.tourismroi.com). The share of Ethiopia is low even compared with its neighbors. According to the official statistics of the Ministry of Culture and Tourism of Ethiopia (2003-2005) as cited by Chernet (2008), even though the international tourist flow in Ethiopia increased from time to time, it has the lowest flow in Africa, with a share of only 0.58% in 2004/05.

Travel and tourism has been identified as one of the key sectors of the economy which could make a positive contribution to achieving sustainable development by United Nations Conference on Environment and Development (UNCED), in the Rio Earth Summit. Sustainable tourism has three interconnected aspects: environmental, socio-cultural, and economic. It includes optimum use of resources (including biological diversity), minimization of ecological, cultural and social impacts, and maximization of benefits for conservation and local communities (Creaco, 2003).

Ethiopia has many unique resources for international tourism. It is one of the richest and most diversified potential destinations of international tourism. Regarding the tourism potential of Ethiopia, Briggs (2003:15) underlined as "… *the combination of wonderful scenery, unusual prolific wildlife, and fascinating historical sites makes it [Ethiopia] a wonderful rewarding and constantly stimulating country*". It has a unique historical and cultural heritage, magnificent scenery, a surprisingly cool climate, rich flora and fauna, important archeological sites and hospitable people (UN, 2004). Due to this incredible uniqueness, the country has the potential to become one of the most important tourist destinations in the world. Nevertheless, given its potential and actual tourism resources on one hand and compared to other LDCs on the other, its tourism performance is not satisfactory (Yusuf, 2004).

Although tourism contributes to the economic development, it also resulted in negative impacts due to large number of visitors (mass tourism) damaging destination areas. Due to this situation, since the 1990s, the tourist concern for environmental issues increased and ecotourism has developed as a response to the perceived negative effects of mass tourism. As a result ecotourism

has become the most rapidly developed part in the world tourism with its annual growth of 30% (Zheng, 2007:31). Ecotourism tends to be encountered in destinations where flora, fauna and cultural heritages are the primary attractions. The industry actively works towards conserving or improving the natural and cultural heritage through managing its own operations to help conserve the environment (Kiss, 2004:23; Edelman, 2006:7). Ecotourism has been identified by United States Agency for International Development (USAID) as an enterprise which has high positive contribution to the conservation of endangered biological resources. Contribution of ecotourism includes raising local awareness about the value of biological resources, increasing local participation in the benefits of biodiversity conservation (through new sources of jobs and incomes) and generating revenues toward conservation of biologically rich areas (www.usaid.gov). Natural resource management can be used as a specialized tool for the development of ecotourism. With human encroachment, natural resources worldwide are depleted: without knowing the proper utilization of certain resources they are destroyed and their flora and faunal species are becoming extinct. Ecotourism, which typically involves nature-based tourism, plays a significant role in the conservation of these resources (Anderson, 1996:10).

Ecotourism could be a link between protected areas and local communities by generating income for local communities while achieving the conservation goals of protected areas (Rodger, 2005 and Henze, 2007). The experience of different countries like Costa Rica (Buchabaum, 2004), Ecuador, Ghana (Edelman, 2006:5), Nepal, Madagascar, Brazil, Belize (Ngece, 2002:11) revealed that ecotourism has played a great role as a viable strategy in sustainable natural resources management.

1. 2 Statement of the Problem

Even though natural resources in Ethiopia have great contribution for the development of tourism in general and ecotourism in particular, most of natural resources are highly exposed to degradation (Demel, 2001). In relation to resource depletion, Badege (2001) and Ferede (1984:19) had clearly stated that Ethiopians are facing rapid deforestation and land degradation that has been fueled by increasing of population which in turn resulted in extensive forest

clearing for agricultural use, overgrazing, exploitation of existing forests for fuel wood, fodder and construction materials, setting of fire to create pasture land, expansion of settlements etc. There is a rapid decreasing percentage of the forest cover of the country- means it was 40% in 1900, 16% in 1954, 8% in 1961, 4% in 1975, and 3.2% in 1980 and now it is estimated to be less than 3%. The current rate of deforestation is estimated to be 160,000 – 200,000 hectares per year. This alarming rate of deforestation is the major cause of the disappearance of various indigenous wild animals and plants, and it has also brought about adverse effects on the country's tourism industry, bio-diversity and economy, among others (EPAE, 2002).

Little of the natural vegetation of the northern high lands remains today due to human activities that have profoundly altered both the vegetation and the landscape (Ferede, 1984; Badege, 2001). Borena-Saynt Park (formerly Denkoro natural state forest) between Borena and Saynt Wereds, South Wollo administrative zone, is among the remaining forest resources of the Amhara National Regional State and it is one of the national state forest priority areas of Ethiopia. The forest with its unique scenery, amazing caves, endemic flora and fauna has high potential for the development of ecotourism (Woldegbreil, 2003:42; Negash, 2002). Based on preliminary studies conducted so far, four endemic mammals, namely Ethiopian wolf (canis *semenis*), Menelik Bush Buck (Tragelaphus Scriptus *mencliki*), Gheleda Baboon (theropithecus *geleda) and* Starck's Hare (Lepus *starckii)* and more than ten endemic birds of Ethiopia are found in the forest. The area, due to its varied agro climatic zone that ranges from hot zone (*kola*) to cold zone(*wurch*), is endowed with different flora species in which some are endemic to Ethiopia (Dessalegn, 1998; Baharu, 1998; Woldegebreil, 2003:18-20).

Borena-Saynt park has been facing a number of threats like heavy grazing of under storey, the cutting of trees for construction, farm tools and fuel, expansion of cultivated area, fire and hunting, due to increasing human population and livestock pressures. As a result of these factors, the remaining forest resource of Borena-Saynt park is now 4375 hectares (Zikire Hig No. 10/2009) that is almost confined to Borena Wereda, which was more than 6000 hectares in the 1950s (Baharu, 1998). The forest is now protected by guards employed by the government, but still there is a great conflict with the local communities which threaten the sustainability of the resources (Woldegebreil, 2003; Negash, 2002; Dessalegn, 1998; Baharu, 1998). Protecting forest resource by government employed guards so far in Ethiopia has not been successful from

sustainable resource management point of view (Akirima, 2007:8). Unless this rapid rate of resource destruction is left unchecked, with increasing human population and livestock pressure, irreparable damage and loss of biodiversity is imminent for the simple reason that the resources are the principal source of the economy of the local people so that there may not be any forest resource left in the near feature and the sustainability of Borena-Saynt Park would be questionable (Woldagebreil, 2003). Even though, some studies have been undertaken by different scholars like Negash (2002), Abate (2003), Woldegabreil (2003) and Lakew et al (2007) on the biodiversity of the park, its potential for ecotourism and the pressure exerted by the locals on the natural resources are not studied in detail to the best of my knowledge.

Therefore, this research was undertaken to assess the potential (opportunities) of Borena-Saynt Park for the development of community-based ecotourism that enables to sustainable forest management and to identify the main problems (challenges) related to the management of the resource as well as development of ecotourism on the park.

1.3 Research Questions

The following basic questions have been treated in the study.

- What major ecotourism resources (both natural and cultural) are found in Borena-Saynt Park those are vital for the development of community based ecotourism?
- What major opportunities are found in and around Borena-Saynt Park that are vital for the development of community based ecotourism?
- To what extent does expansion of agricultural land affect the forest resource of the Park?
- Is the forest resource of the park influenced by high demand of wood for fuel and construction material by the local communities?
- Is shortage of grazing land for the local communities pose pressure on the forest resource of the Park?
- What are the factors that determine the participation of the local communities in natural resource management programs?
- Are the infrastructural facilities conducive for the development of community based ecotourism on the park?

1.4 Objectives of the Study

1.4.1 General Objective

Basically**,** this research focused on assessing the potential (opportunities) of Borena-Saynt Park for the development of community based ecotourism as a viable strategy for sustainable natural resource management and identifying the problems (challenges) that have an impact on the development of community based ecotourism.

1.4.2 Specific Objectives: - Specifically, the research has been conducted**:-**

- To identify the major ecotourism resources (both natural and cultural) of Borena-Saynt Park those are vital for ecotourism development.
- To assess the major opportunities found in and around Borena-Saynt Park that are vital for the development of Ecotourism.
- To assess the impacts of shortage of cultivable land and grazing land over the park.
- To assess the basic socio-economic conditions of the local community in relation to the management of ecotourism resources
- To asses the main conservation problems (constraints) in relation to ecotourism development in the area.
- To explore the major determinant factors in the participation of local communities in natural resource management.
- To explore possible options those help to over come the existing problems.

1.5. Significance of the Study

The researcher has believed that this study would be important for the following reasons:-

- The findings of the research would serve as an input for policy makers and concerned bodies working in natural resource conservation as well as ecotourism.
- The research gives some insights how community based ecotourism is vital for the livelihood improvement of the local communities and sustainable natural resource management.

- The research will help to forward possible solutions that help to overcome the major problems (challenges) related with natural resource conservation.
- The research would be used as a spring board to conduct further studies to enrich the area of investigation.

1.6 Rationale of the Study

- Ethiopia is one of the few countries in the world that have plenty of cultural, historical, archeological and ecological heritages that are basic for the development of tourism in general and ecotourism in particular but its potential is underutilized.
- Ecotourism could be an additional input to the efforts of local communities in income generating and improvement in their livelihood.
- Ecotourism as an efficient income, employment and foreign exchange generating factor is a necessary instrument for environmental protection (win-win approach).

1.7 Delimitation of the Study

This research is mainly concerned with assessing the potential and opportunities of Borena-Saynt Park for the development of community based ecotourism. It tried to identify the major challenges for the conservation of the resource basically how population pressure and livestock pressure have affected the forest resource and its impact for the development of ecotourism in the area. The research also tried to identify possible conservation options of the resource. The natural resource is shared by two Weredas in South Wollo, namely Borena and Saint, with the largest proportion in Borena Wereda (Negash 2002; Woldegabriel 2003). So this research focused mainly on Borena wereda.

1.8 Limitation of the Study

Financial and time constraints have contributed to limit the study only to Borena wereda though it shares boundary with Saynt wereda. Stakeholders from Amhara National Regional State level were not included due to the aforementioned problems. Due to shortage of published articles on Borena-Saynt Park, unpublished documents were frequently used.

1.9 Description of Study Area

1.9.1 Borena wereda

Borena wereda in South Wollo (formerly Debresina wereda - until 2007) is one of the 145 weredas found in Amhara regional state. The Wereda is situated between $10^0$30'30"-$10^0$50'55"N latitude and $38^0$25'35"- $38^0$55'20" E longitude (Lakew et al, 2007:5). It is bordered on the South and Southeast by Wegede wereda, on the West by East Gojjam zone (separated by Abbay river), on the North by Saint Wereda and on the Northeast by Legambo wereda (BWFEDO, 2001:2). According to the population census commission statistical report (2008), the total population during the 2007 population and housing census was 158,920 (6.3% of the total population of the zone) of which 78,988 (49.7%) were males and 79,932 (50.3%) females. The urban dwellers constituted 9,480 (6%) which is much lower than the average of the zone (12%), region (12.6%) and country (16.1%). With a total area of 1000.78 square kilometer (South Wollo Agricultural Bureau, 1998), which accounts 5.9% of the area of South Wollo, the population density of the wereda is 158.8 persons/km^2 which is higher than the average population density of South Wollo zone (148.6% persons /km^2), Amhara regional state (101.2% persons /km^2) and the country as a whole (66.5 persons /km^2) (see table1).

The topography of Borena wereda is dominated with mountain (10%), plain (20%), valley (30%) and ups and downs (40%). Its elevation ranges from 1100 meters to more than 3700 meters. This enables the wereda to have *kola* (32%), *woina dega* (47%), *dega* (20%) and *wurch* (1%) agro ecological zones. The annual mean temperature and precipitation are 18^oc and 1200 mm respectively (BWFEDO, 2001:2-6). It is divided in to thirty six kebeles and Borena-Saynt Park is bordered by Nine kebeles in the side of Borena wereda namely, *Miskabie, Fati Janeberu, Abu, Jelisa Libanos, Anferfra, Chero Cherkos, Chiro Kadis, Dega Dibi and Hawey Betaso* (ANRS PaDPA, 2006:6) (See map 3).

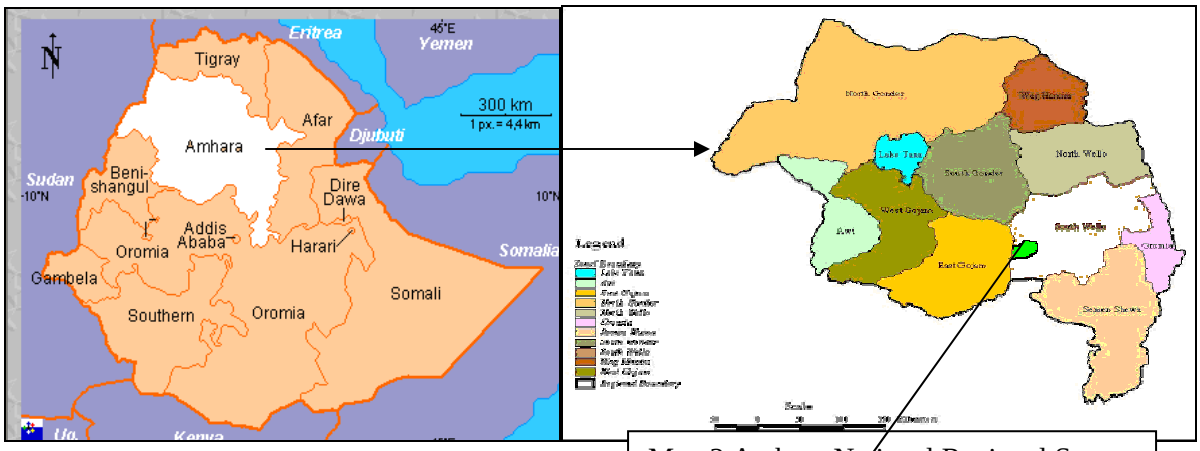
The Borena- Saynt Park is found in the Northern and Northwestern side of the Wereda (16 kms from Mekane Selam - capital of Borena Wereda) following Denkoro stream, which is tributary of Abbay river, in east-west direction. Mixed farming is the dominant economic activity of the

Wereda which includes crop production and rearing of livestock (Woldegabriel, 2003:28-29). The total yield produced through agricultural activity is not sufficient to support the house holds. So, in order to increase their production, farmers expand their agricultural land towards the forest area. Rearing of animals is also practiced to supplement the cultivation of crops. All these have an impact on forest resource of the park (ANRS PaDPA, 2006:1).

Table1: Comparison of Borena Wereda with South Wollo, ANRS and Ethiopia

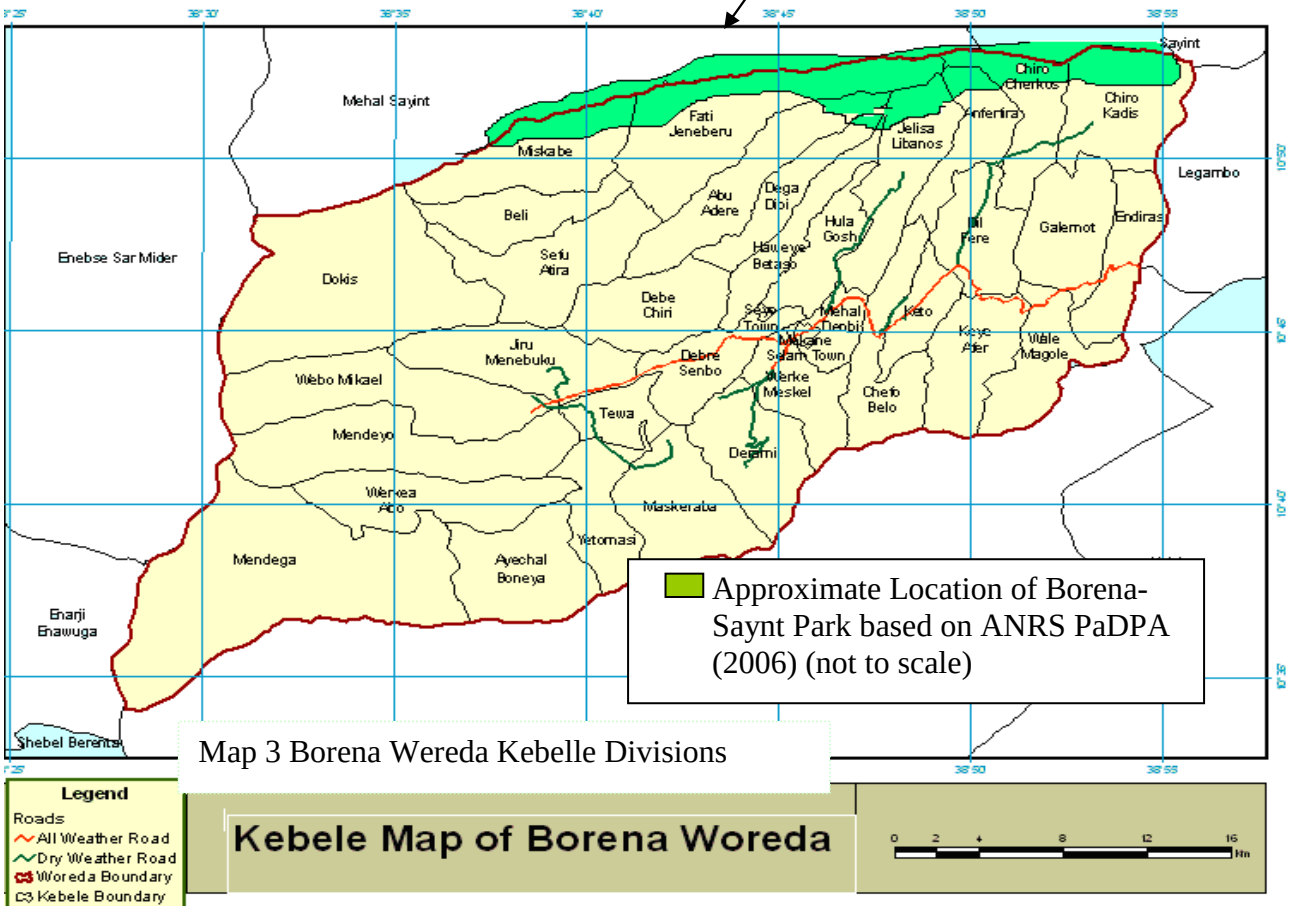
Description	Ethiopia	ANRS	South Wollo Zone	Borena Wereda
Total population (2007 census)	73 918 505	17,214,056 (23.3%)	2 519 450 (14.6%)	158 929 (6.3%)
Total area (Km^2)	1 112 000	170 152 (15%)	16 956 (10%)	1000.78 (5.9%)
Population Density (per/km^2)	66.5	101.2	148.6	158.8
Urban population (%)	16.1	12.6	12	6
Rural Population (%)	83.9	87.4	88	94

Source: BWFEDO (2001); Population Census Commission Statistical Report (2008)



Map 1 Ethiopia - National Regional State Division

Map 2 Amhara National Regional State-Zonal divisions



Approximate Location of Borena-Saynt Park based on ANRS PaDPA (2006) (not to scale)

Map 3 Borena Wereda Kebelle Divisions

1.9.2 Borena Saynt Park

Borena-Saynt Park (the former Denkoro protected state forest) is found in South Wollo, Amhara National Regional State, between Borena and Saynt weredas. It is located between 10^{O} 50' 45.4"- 10^{O} 53' 58.3" N latitude and 38^{O} 40' 28.4" – 38^{O} 54' 49" E longitude (PaDPA, 2006:3). The area was originally recognized and proposed to protect the natural resources during the reign of Zara-Yakob in the 15^{th}C (Dessalegn, 1998:56; Baharu, 1998:95). During this time, the forest cover was too large encompassing vast areas extended as far as the edge of the Blue Nile gorge (Woldegabreil, 2003:9). According to Dessalegn (1998:56), large forests in the past were managed as crown property by emperors and king both for environmental purpose and to serve as a source of fuel and timber for the royal house holds. In 1952, during the Haileselassie regime, the resource was recognized as an important biodiversity (priority forest) area and demarcated in 1973. Even though the protection of the forest continued up to the end of the Dergue regime as a state forest, sever destruction had took place on it during the government change over in 1999. In 2003, the regional government designated it as a regional forest priority area (Woldegabrial, 2003: 10). Due to its biodiversity importance, the Amhara National regional State has decided it to be a park with the name of Borena-Saynt Park by proclamation number 68/2009 (Zikre Hig No.10/2009).

The park, with a total area of 4375 hectares (Zikre Hig No.10/2009), harbors significant number of large and small mammals, birds, amphibians and plant species (Woldegabrial, 2003:17-24; Lakew et al, 2007:12-13). Borena-Saynt Park contains one of the few representative highland biodiversity in Ethiopia, where most of the highland areas are under serious human influence and resulted in to environmental services destruction (Lakew et al, 2007:15). The composition of the forest in the park varies according to its altitude. The lower forest is dominated with podocarpus (Juniper and Olea) while the upper forest contains, among others, Rapanea, Dombeya, Hagenia, Erica arborea and Hypericum revolutum. Above 3000m altitude, the area is dominated by tall Festuca gilbertiana with scattered Gaint lobelia rhynchopetalum and red-hot pokers (kniphofia foliosa) (Negash, 2002; Woldegabrial, 2003 and Lakew et al, 2007). (For detail flora types of the park, see Annex 9).

CHAPTER 2: REVIEW OF RELATED LITERATURE

Community Based Ecotourism Development as a Viable Strategy for Sustainable Natural Resource Management

2.1 Theoretical/conceptual Frame work

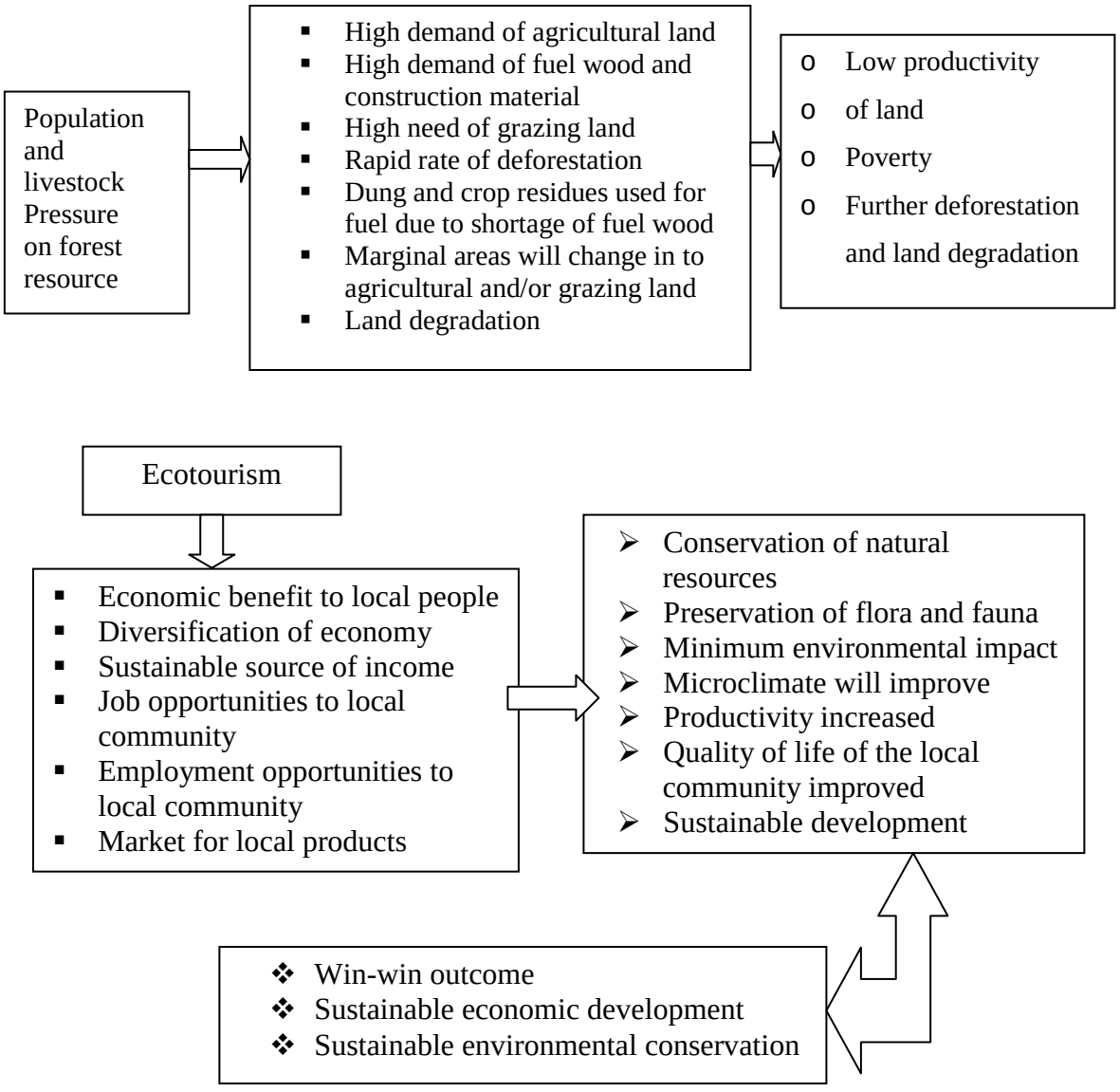


Figure 1: Conceptual frame work of the problem

In developing countries like Ethiopia, the major livelihood of the population is dependent on primary economic activities like agriculture that are highly dependent on natural resources. Due to high population increase, the forest resources of such countries are highly deteriorated. Land degradation is pervasive that lead to low agricultural productivity. Farmers use crop residues and animal dung for fuel instead of using it for fertilizer. Poor farmers do not have the capacity to buy fertilizer and selected seed so that, instead of increasing the productivity of the existing land, they expand their farm land to marginal areas at the expense of forest and grazing land. In order to overcome the problem and to diversify their livelihood, ecotourism acts as a best alternative. It plays a dual role both in environmental protection and for sustainable economic development of the local people by providing income, job opportunity, employment opportunity, market for locally produced products etc (Anderson, 1996).

2.2 Definition of Concepts

2.2.1 Tourism

Tourism as an economic activity is hard to define but easy to recognize (Schaller 1998) so that different scholars explain it in different ways. The most widely accepted definition is the one given by Hayward (2000:56) as "*the temporary, short term movement of people to destinations outside the place where they normally live and work and the activities they take part in during their stay at these destinations*." It is the person's subjective motive (Schaller, 1998) that makes him/her a tourist or not and the traveler's intention to return home afterwards (Hayward, 2000).

2.2.2 Sustainable Tourism

Sustainable tourism embraces all segments of the tourism industry with guidelines and criteria that seek to reduce environmental impacts and to improve the contribution of tourism to sustainable development and environmental conservation. According to World Tourism Organization (WTO), sustainable tourism leads to the management of resources in such a way that economic, social, environmental and aesthetic needs can be fulfilled. It is in short a tourism activity that meets the needs of present tourists and host regions while protection and enhancing opportunities for the future (Baker, 2008).

2.2.3 Ecotourism

Ecotourism is a relatively new idea and has emerged in the late 1980s that has dramatically captured the attention of many people from a variety of backgrounds (Koeman, 1998). It is seen by many conservation groups as a means to ensure ecologically sustainable development (Tisdell, 1997:2). International Union for Conservation of Nature (IUCN) defined it as:

> …*environmentally responsible travel to natural areas, in order to enjoy and appreciate nature that promote conservation, have a low visitor impact and provide for beneficially active socioeconomic involvement of local people* (Ngece, 2002:1).

According to Lowmen (2004:2), ecotourism follows two important principles of sustainability namely, promoting conservation of the natural ecosystems and supporting the local economies. The major characteristics of ecotourism include (Neto, 2002:5; Lowmen, 2004:1; Kiss, 2004:332-333; Baker, 2008:326):-

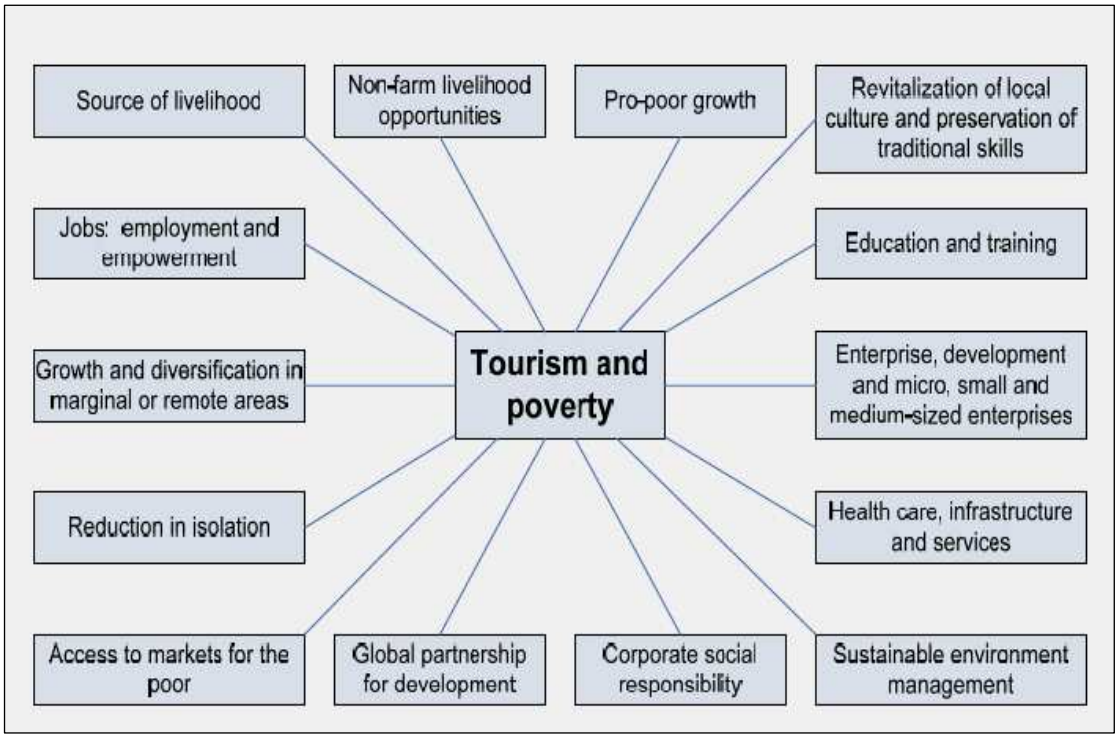
- Involves travel to natural destinations
- Minimize the negative impacts of mass tourism
- Builds environmental awareness and respects local culture
- Provides direct financial benefits for conservation and empowerment for local people
- Employ locally and give money back to the community
- Local participation in decision making

2.2.4 Community Based Ecotourism

Community-based ecotourism, according to The International Ecotourism society (TIES) (2006:1), is *"a form of ecotourism where the local community has substantial control over, and involvement on, its development and management, and a major proportion of the benefits remain within the community. It fosters sustainable use of land and natural resources."*

2.3 Significance of Ecotourism - Why Ecotourism?

Ecotourism, a recent but widely hailed tourism alternative (Schaller, 1998), has high potential to be an instrument for rural economic development and environmental conservation. Figure 2 illustrates the role tourism plays in poverty reduction and natural resource management**.**



Source: UNESCO (2007:8)

Figure 2: Linkages between Tourism with poverty reduction and Environment management

2.3.1 Economic Benefits

The economic benefits of ecotourism as identified by different scholars (Anderson, 1996; Koeman, 1998; Agrusa and Guidry, 1999; Desenbrok, 2002; Ngece, 2002; Lowmen, 2004; Kiss, 2004 and Weggoro, 2008) include;

Employment opportunities: - it brought employment opportunities to often previously disadvantaged people and a significant amount of the industry remains in the form of small scale projects that can be funded by locals. Since the sector is labor intensive, its expansion generates more employment opportunities at semi-skilled, technical and managerial level than an equivalent expansion in other sectors of the economy.

Creating new jobs:- tourist expenditures on lodging, transportation, food, guides and souvenirs is an important source of income for local communities by providing supplemental income to rural farmers, women and young people.

Diversifying regional economies: - it is relatively decentralized industry that is highly capable of diversifying regional economies of less developed countries which are dependent of primary activities.

Catalyst for development: - tourism activities act as catalyst for the development of other sectors of the economy, that is, it provides strong forward and backward linkages so that induced macro/micro economic incentives as well as motivations for development in the region. Ecotourism stimulates profitable domestic industries like hotels and other lodging facilities, restaurants and other food services, transportation systems, handicrafts, guide serves etc. Tourism plays a great role in achieving the Millennium Development Goals. (See Annex 6 for the contribution of tourism in achieving the Millennium Development Goals).

Minimize leakage:- being locally owned and operated, ecotourism projects are not caught up in the need to conform to corporate western multinational tourism concerns, and therefore can have a much higher input of local products, materials and labor. This means greater multiplier effects in the local economy and also reduces import leakages and the remittances from expatriate labor which results from large-scale, foreign owned operations.

GDP: - ecotourism contribute a great deal of gross domestic product.

Foreign Exchange earnings: - while tourism is sensitive to the level of economic activity in the tourist generating countries, it provides higher and stable earning for developing countries than those from primary products.

Development of infrastructure: - the benefits accruing from investment in infrastructure and super structure as air ports, hotels and restaurants, road networks, communications, power and water supply as well as other related public utilities are widely shared with other sectors of the economy, resulting in to greater economic efficiency.

Transfer of income: - tourism is an excellent vehicle for transferring income from wealthy nations and persons to the poorer sections of society. Ecotourism is especially effective in this transfer since travelers often venture in to remote, economically disadvantaged regions.

2.3.2 Environmental Benefits

Ecotourism, if properly managed and applied, can benefit the environment in the following ways (Anderson, 1996; Ngece, 2002; Dasenbrock, 2002; Kiss, 2004 and Weggoro, 2008).

- Ecotourism is relatively less-pollutant industry, which can enhance the conservation and promotion of natural and cultural heritages.
- Ecotourism will foster responsible tourist behavior, conservation of important wild life habitats and ecosystem.
- It is best alternative activity to environmentally damaging activities like farming, logging and mining. Although ecotourism may not be able to preserve these untouched areas as they would if human contact were prohibited, it can help to protect them from the dangers of destructive agricultural practice, mining and industrialization. *"The flora and fauna may be bothered [*due to ecotourism development*], but at least it will not be destroyed"* (Dasenbrok, 2002:12).
- Encourages individual conservation efforts- informed tour guides and educational pamphlets can incite tourists to become environmentalists, thereby promoting conservation efforts.
- Encourages small scale infrastructure construction: - the infrastructure demands of ecotourism industry primarily include the construction of small scale hotels and transport systems, there by maintaining a healthy balance between expanding tourism industry and protecting natural resources.
- Encourages productive use of lands which are marginal for agriculture, enabling large tracts to remain covered in natural vegetation.
- Demonstrates the importance of natural and cultural resources to a community's economic and social well-being and can help to preserve them.

2.3.3 Social Benefits

Ecotourism development, in addition to economic and environmental benefits, might contribute socially by enhancing local community esteem and provides the opportunity for greater understanding and communication among people of diverse background. Ecotourism helps for political empowerment of local communities and fosters respect for different cultures (helps to develop tolerance). It is an important vehicle for promoting cultural exchanges (Agrusa and Guidry, 1999; Nepal, 2002; Weggoro, 2008)

2.4 Side Effects/Negative Impacts of Ecotourism

Negative impacts from ecotourism occur when the level of visitor use is greater than the environment's ability to cope with this use within the acceptable limits of change. Uncontrolled tourism poses potential threats to many natural areas around the world. It can put enormous pressure on an area and lead to impacts such as soil erosion, increased pollution, discharges in to the water, natural habitat loss, increased pressure on endangered species and heightened vulnerability to forest fires (Anderson, 1996; Veneeva, 2007; Anstrand, 2006:18-20).

2.4.1 Negative Economic effects/Impacts of Ecotourism

Different studies (Anderson, 1996; Dasenbrock, 2002; Neto, 2002) stressed that ecotourism, if not carefully monitared and managed, may results in the following economic side effects:-

- **Leakage:** – though the major target of ecotourism is to generate domestic employment and economic opportunities for local communities, profits can leak out of the regions(locals) in to the hands of elits and wealthier nations. Many developing nations donot have the resources to construct the infrastructure necessary for eco/tourism development, which leads them to turn to foreign corporations and international donors. The widespread involvemnet of foreign investors can lead to a leakage problem in which the profits earned by the tourism sector donot stay in the country.
- **Exploitaion of local workforce:**- the resident population may exculde from the develoment process and relegate to minimum wage support jobs.
- **Instability:**- Tourism is highly vulnerable to international shocks like natural disasters, wars, sudden changes in consumer tastes, sharp economic downturns, terrorist attacaks etc.

2.4.2 Negative Environmntal effects/Impacts of Ecotourism

According to Anderson (1996), Holloway (1999) and Neto (2002), poorly managed ecoturism results in the following negative enviromnetal issues.

- The technological complexity of the present centuary has led to various forms of pollution which are both initiated and compounded by tourism development in general and by travel in

praticular. Any lagre-scale tourism movement increases air pollution, contribute to unacceptable levels of noise in rural surroundings and disposal of waste into waterbodies.

- Although ecotourism is intended for small groups, even a modest increase in population puts extra pressure on the local environmnet and necessiates the development of additional infrastructure and amenities. The construction of water treatmnet plants, sanitation facilities, and lodges come with the expoliataion of non-renewable energy sources and the utilization of already limited local resources.
- Its consumption of virgin territories like deforesatioin, disruption of ecological life systems and various forms of pollution, all of which contribute to enviromental degradation.
- When the overwhelming majority of profits are put into the pockets of investors instead of reinvestmnet in to local economy or environmnetal protection, it causes the resentmnet by local people results in enviromntal degradation.
- Loss of biodiversity: - when land and resources are strained by excessive use, and when impacts on vegetaion, wildlife, mountain marinea and coastal environmnets and water resources exceed the carrying capacity, it can cause loss of biodiversity. This loss of biodiversity in fact means loss of tourism potential.
- The presence of affluent ecotourists encourage the development of destructive markets in wildlife souvenirs contributing to illegal harvesting and poaching from the enviroment.
- Introduction of exoitic species: - tourists and suppliers may unconsciously bringin species that are not native to the local environmnet and that can cause enormous disruption and even destruction of ecosystems.

2.4.3 Negative Socio - cultural Effects/Impacts of Ecotourism

The common sociocultural effects of ecotourism (Schaller, 1998; Holloway, 1999; Neto, 2002) include:-

- **Displacemnt of local people from their land**:- eventhough ecotourism often claims that it preseves and enhances local cultures, evidences shows that with the estabilishmnet of protected areas, local people have illegally lost their homes and most often with no or little compensation. Pushing people on to marginal lands does little to enhance livelihoods even when a proportion of ecotourism profits are directed back in to the community.

- **Land use conflict**:- ecotourism often causes conflict and changes in landuse rights and fails to deliver promises of community level benefits.
- **Cultural change**:- indigenous cultural change may result from contact between tourists and locals, which is usually closer and more prolonged than in mass tourism. Problems arising when indigenous villagers adopt city or western ways, include acculturation, locals may begin "manufacturing" culture solely for tourists' consumption.
- Tourism has contributed to an increase in crime, thefts, muggings and expansion of HIV/AIDS.
- Locals may come to experience increasing dissatisfaction with their own standards of living or/and way of life and seek to imitate the tourists.
- Job opportunities and higher salaries attract workers from agricultural and rural communities who freed the restriction of their family and the familiarity of their home environmnet, may abandon their traditonal values. Leading to an increase in the breakdown of marriage and in divorce.

2.5 Mechanisms to Minimize the Negative Effects/Impacts of Ecotourism

Natural resource depletion and environmental degradation assocaited with tourism activities are some times serious problems in tourism-rich regions (Neto, 2002:7). Controlling ecotourism within the limit of the carrying capacity of the environmnet can be accomplished through sound managemnt techiques or the use of economic instrumnets like user charges (or entrance fees), various kinds of taxes and imposing a limit on the number of visitors or tradable permits (Anderson, 1996:10-12). In order to minimize the side effects of tourism/ecotourism, governmnet intervention at differnt levels is needed in the following ways (Tisdell,1997:6):-

- ✓ limiting the number of tourists and tourist operators based on the carrying capcity of the area,
- ✓ Improving the patterns or logistics of tourism movemnets to reduce enviromnetal damage or adverse effects,
- ✓ Providing appropraite environmtal education to tourist operators and tourists. Whether it is through tour operators, lodges, national parks, private reserves, or different types of ecotourism related activities, education can make a difference. Education is one of the most crucial elements of ecotourism because it can change the way people (both locals and tourists) think about the environment,

- ✓ Introducing technological improvemnts to reduce enviromnetal damage,
- ✓ Imposing restirctions on buildings,
- ✓ Due attention should be given for the involvement of local communities in ecotourism projects so as they can develop a sense of ownership with the project. Local participation serves as an early warning system that helps managers to avoid or plan for decisions that might otherwise cause conflict with the local population.

2.6 Community Based Ecotourism and Local Communities

Developing a national ecotourism strategy needs cooperative, collaborative arrangements between governments at all levels, parks, NGOs, tour operators and local communities (Koeman, 1998). Boo (1990) as cited by Koeman (1998) stressed that ecotourism to be a tool for conservation and development should bring the local people in to the planning and development of the industry. One of the essential elements of ecotourism is the encouragement of active participation of local population in the conservation process and careful consideration should also be made to the distribution of benefits of ecotourism amongst locals. The local population must be convinced that the forest resource is more valuable as a tourist location than as land used for growing crops, raising cattle or for logging (Agrusa and Guidry, 1999 and Andorson, 1996).

Hardyment (2003) and Agrusa & Guidry (1999) pointed out that ecotourism should minimize negative impacts on the host community otherwise the local population may come to dislike the presence of tourism and this could undermine its long term prospects. Conflicts, unauthorized farming and logging and the inability to successfully manage and police parks have shown that the needs of local populations must be taken in to consideration in order to protect natural resources. Ecotourism is mostly found in designated protected areas or national parks which may have been imposed upon the indigenous population and without economic benefits, the host community will have little reason to view the intrusion of tourists positively and will have little incentive to protect the environment upon which ecotourism depends. Generally, the degree of control the local population has over ecotourism in their locality is perceived as being a significant element of sustainability. Including a participation program in the design stage of a project provides the opportunity for the local community to become aware about the purpose and

benefits of the project, there by, increasing support for the effort. Training local people to manage their own projects can avoid misunderstanding and possible hostility (Hardyment, 2003).

After the mid 1980s several USAID missions have initiated community based ecotourism and natural resource management programs with the prime intention of rural empowerment, local governance and resource conservation (Natsios, 2006). Barkin (1996:21) highly emphasis the importance of local community participation in ecotourism development as:

> … *unless ecotourism actively incorporates the local society in to service planning and provision, and includes programs to meet the fundamental needs for income and employment for all people in the locality, the special quality of the site and its flora and fauna may be irreparably damaged.*

A good example for this is the widespread resentment amongst the Maasia nomadic pastoralists over the inadequate compensation paid to them for their displacement from traditional grazing lands with the establishment of national park that results in killing of wildlife in the parks as a protest (Barkin, 1996:23). There fore, the active involvement of local communities in ecotourism development projects is very essential for its sustainability.

Table 2: Forms of community involvement in ecotourism development

Type of enterprise	Nature of local involvement	Examples
Private business run by outsider	• Employment • Supply goods and services	• Kitchen staff in a lodge • Sale of goods, building materials
Enterprise or informal sector operation run by local entrepreneur	• Enterprise ownership • Self employment • Supply of goods and services	• Crafts sales, food kiosk, campsite, home stays • Guiding services • sale of fuel-wood, food
Community enterprise	• Collective ownership • Supply of goods and services • Employment or contributed labor	• Community campsite • Craft center • Cultural center
Joint venture between community and private operator	• Contractual commitments • Shares in revenue • Lease/investment of resources • Participation in decision-making	• Revenue sharing from lodge to local community on agreed terms • Community leases land/resources/concession to lodge • Community holds equity in lodge
Tourism planning body	• Consultation • Representation • Participation	• Local consultation in regional tourism planning • Community representatives on tourism board and in planning

Source: Baker (2008:332)

2.7 Ecotourism, Environment and Sustainable Development

Ecotourism development is now days increasingly utilized for its multi purpose of economic development (poverty reduction), sustainable natural resource management, biodiversity conservation and local governance (Barkin, 1996). It helps to protect and enhance the natural resources that most of the world's poor look for their livelihoods (Natsios, 2006). Many of the world's poor depend directly on the environment through agriculture, forestry or fisheries for their livelihoods (Natsios, 2006) that has a great role for land degradation (Demele, 2001; Berry, 2003). In order to overcome such environmental issues, ecotourism serves as a powerful

incentive to protect natural resources (Barkin, 1996) because the basic rational behind ecotourism is to preserve natural resources while profiting from them (Dasenbrock, 2002; Hardyment, 2003) through enhancing the special qualities of the site with its flora and fauna, while allowing local inhabitants and future visitors to continue to enjoy these qualities (Barkin, 1996). Haroon (2002:19) has explained the relationship between ecotourism and sustainable development as:-

> *Ecotourism promote sustainable development by establishing a durable productive base that allows inhabitants and service provides to enjoy rising standards of living because it aims to ensure ecologically, economically and culturally friendly tourism. Sustainable tourism can be achieved when activities are controlled by the local community in which tourism activities are being generated. In short sustainable development, sound environmental management and ecotourism are closely linked.*

According to Tisdell (1997:7-10), the sustainability of ecotourism depends on the following factors:

- ✓ Its economies- it will not be sustained if it is unprofitable for ecotourism operators,
- ✓ The extent to which it is consistent with conserving its resource base,
- ✓ The social acceptability- local communities, in some case, are hostile to ecotourism development because they believe it is a threat to their life style and livelihood,
- ✓ Political sustainability - in the absence of adequate lobby groups in favor of conservation, areas suitable for ecotourism may be used for economic activities incompatible with the development of ecotourism.

2.8 Ecotourism as a Viable Strategy for Sustainable Natural Resource Management: Case Studies

Ecotourism plays a great role in natural resource management by generating income for the local communities (Kiss, 2004:233). He added that, community based ecotourism projects typically claim success in motivating local communities to reduce their exploitation of wild plant and animal species, to help control poaching by outsiders, or to set aside part of their farm or grazing

land as a conservation areas. Ngece (2002:4) also underlined its importance as "*community-based ecotourism if well established can play a reasonable role in community development and bringing people closer to conservation.*" Conservation organizations fund Community Based ecotourism as a means of reducing local threats to biodiversity, such as expanding agriculture, unsustainable harvesting of wild plants and animals, and killing wildlife that threatens peoples' crops, their livestock or themselves (Kiss, 2004:233). The following practical case studies show how community based ecotourism development can play a great role in sustainable natural resource conservation.

The case of Budongo Forest Reserve in Uganda

The Budongo Forest Reserve, in Northern western Uganda, was gazzetted as a Central Forest reserve in 1932. But the deep forest tended to be shunned by local people for gathering food, building materials, fire wood, craft materials and agricultural land. In 1995, the Budongo Forest ecotourism project was organized with the aim of promoting forest conservation by integrating conservation with community development, and to achieve active involvement of the local communities in the project and management of the forest. The project enables the women to work as guides, facilitators caretakers; produce handcrafts for sale. The men do similar tasks and additionally work as trail cutters. Farmers' groups in the area are diversifying into vegetable growing and beekeeping, with training provided by the project. The vegetables are being eaten in farmers' homes, and sold to the hotels, lodges and tourism developments connected to the forest, that enables the farmers to have additional source of income. Gradually, the attitude of the local communities to the forest began to change and actively participate in the conservation process (Langoya and Long, 1997: 2-13).

Ghana

Before the introduction of the ecotourism project in Tafi Atome village in the Volta region of Ghana in 2004, forest land was cleared for farm use, forest material was extracted, economically viable trees were sold for profit, and monkey were killed. The development of ecotourism project enables local communities to have incentives for the conservation of the forest resources (Edleman, 2006:10-11).

Zambia, **Kasanka National Park**

Kasanka National Park in the Central province of Zambia was suffering from heavy poaching in the mid-1980s. A British expatriate, David Lloyd, teamed up with a local landholder and gained official permission to rehabilitate the park through community based ecotourism. They established a non-profit limited liability company, Kasanka Trust Limited, which now manages Kasanka National Park under a 10-year agreement with the Zambia Wildlife Authority. Tourist camps, roads and bridges have been constructed and local community development and education projects undertaken. The Trust is largely responsible for conservation management of the park area, including anti-poaching patrols and enforcement. Around 100 local residents are employed in park management and tourism; different tourism related job opportunities have been developed for the locals. As a result wildlife populations have been restored successfully (Buckely, 2003).

Zimbabwe

Before the development of community based ecotourism on Sunungukai, 120km north-east of Harare, the rural villagers from Kapandoro, Hodzi, Munando, Chidiramumba and Mapini were highly exploited the lush green mountains covered with trees and grass which is a home of different fauna and flora species. This led to a serious degradation of the natural environment that was aggravated by inadequate farming land, shortage of grazing land and fuel wood. But after 1993, community based management of natural resources through ecotourism venture was introduces by the CAMPFIRE Association with the intention of providing compensation and substitution can lead to change of attitude and practice of resource management by local communities. The community formed the Sunungukai Management Committee - a community based natural resource management committee which enforces locally developed rules and regulations. Villagers have received training on off-farm activities, different job and employment opportunities have been introduced for them. After six years, remarkable change has been recorded. Locals actively monitor natural resources and participate in its management (Odero and Huchu, 1998).

Latin America

The Toledo Ecotourism Association, the Maya and Garifuna communities of Toledo district in Belize, Central America, has benefited the local communities and in turn assist in environmental conservation (Ngece, 2002:3 and Lowmen, 2004:3). In Brazil, since 1997, the local communities of the extractive reserves of the Padras Negras and Curralinho, in western Amazon have been developing ecotourism as an income generating activity and means of guaranteeing the environmental sustainability and conservation of the forest (Dori and Rosendo, 2003).

Asian Pacific Regions

According to The International Ecotourism society (TIES) (2006:2-3), ecotourism development in Asian Pacific Region has played great contribution for conservation. For instance; the village of Batu Putih in Sabah, Malaysia, had for long experienced tremendous loss of biodiversity due to logging. But after the establishment of the Model ecological Sustainable Community Ecotourism, villagers have became beneficiaries so that a forest rehabilitation program has been started (Ngece, 2002). Poaching and unabated habitat loss due to fragmentation, degradation and conversion of park lands to farming had intensified long-term threats to biodiversity conservation in and around the Royal Chitwan national Park in Nepal. The Chitwan river line forest contains the world's largest concentration of the Bengal tigers (*Panthera tigris)* and one-horned rhinoceros (*Rhinoceros unicornis*). The extensive loss of habitat was associated with high demand of trees for fire wood and fodder. In order to overcome the problem, community based ecotourism project was developed in 1994. After three years, the forest resources have been improved, Tiger and rhinoceros poaching reduced by three fold and the revenue earned from the project has assisted local people to improve their standard of living (Ngece, 2002:2).

Turkey

Forest villagers in Turkey, due to their limited land resources as well as lack of alternative sources of income, had been heavily dependent on utilizations from the forest areas. They apply intensive pressures on the forests by the demolition of forests to gain new arable lands, illegal tree cuttings and using the forest as illegal pastures for animal breeding. Community based

ecotourism has been launched under the Ministry of Forestry to overcome the problem. The project provides incentive credit facilities and technical support services to expand various income-creating activities like breeding, poultry, beekeeping, fishing, carpet weaving, medical and aromatic plant cultures etc. Gradually, the pressure on the forest resources decreased and local communities has participated in conservation processes (Kahvaci et al, ND:3).

2.9 Necessary Conditions for the Development of Ecotourism

The key components of travel and tourism industry according to Agrush and Guidry (1999), Hayward (2000), Haroon (2002) and Wegaroo (2008) includes:-

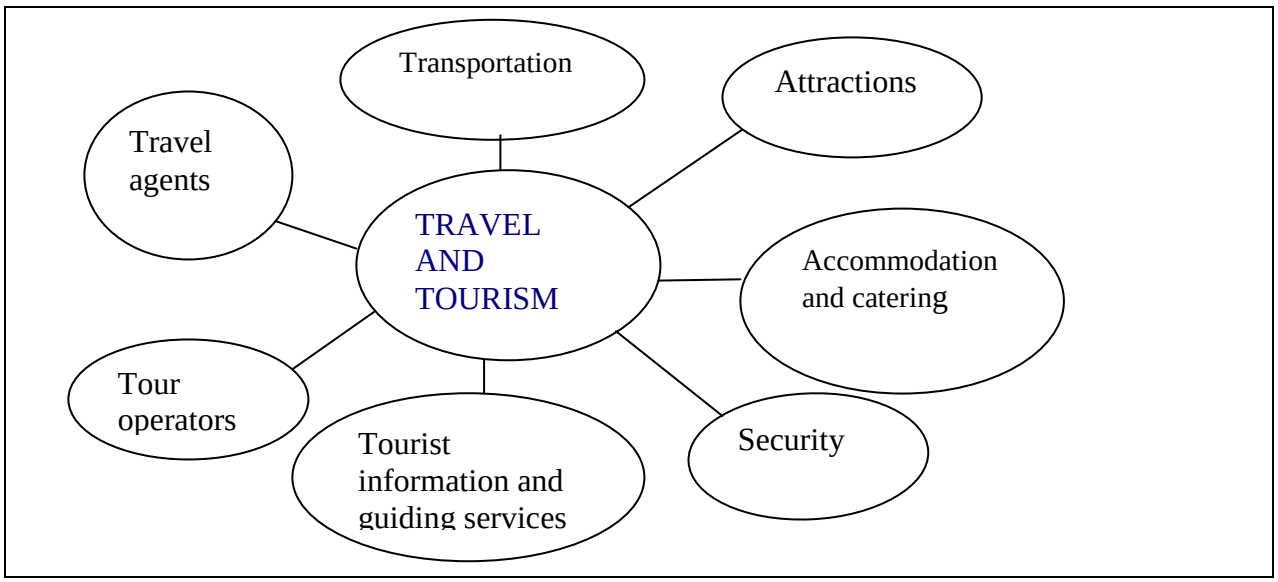


Figure 3: Components of Travel and Tourism industry (Modified from Hayward 2000:65)

- Travel agents: - they provide vital services in the sector like plan travel, itineraries, issue tickets, keep accounts, currency exchange, etc.
- Tour operators: - a tour operator puts together holiday packages which consists ravel (road, sea, air, rail), accommodations (hotels, guesthouses, self catering) and travel service (transfers, car hire, excursions).

- Tourist information and guiding services. Information for tourists is provided by national and regional tourist boards and local tourist information centers.
- Accommodation and catering: - it includes provision of accommodation, food and drink for those who are away from home. The service can be provided in hotels, motels, guesthouses, inns, farmhouses, holiday cottages and chalets, caravan parks and cap sites, restaurants, cafes etc.
- Attractions- which includes both natural and cultural tourist attractions.
- Transportation- efficient transportation system is crucial for the development of tourism industry.
- Security - the availability of peace and stability is the pillar and fundamental prerequisite for flourishing and sustainable tourism development.

2.10 Ecotourism Development in Ethiopia

Ethiopia possesses numerous tourist attractions varied in type and appealing to a wide range of interest. The attractions include historical, cultural, archaeological, anthropological, scenic, climatic, therapeutic, flora and fauna resources. Such a unique combination of attractions within a single country has no match on the African continent, or rarely any where else (Martin 2008). Eight of the heritage of Ethiopia has been registered as world heritage sites by United Nations Economic and Social Council Organization (UNESCO), namely Simien Mountain National Park (1978), Rock-hewn Churches of Lalibela (1978), Fassil Ghebbi (1979), Lower Valley of the Omo (1980), Axum (1980), Tiya (1980), Lower valley of the Awash (1980) and the fortified Historical town of Harar Jugol (2006) (Berhanu 2003). In addition to the world heritages, Ethiopia is extraordinarily rich with varied type of tourist attractions that includes socio cultural, archaeological, historical and natural (Ethiopian Tourism Commission 1995; Berhanu 2003; Briggs, 2003).

Ethiopia's wealth of varied attractions gives it a grate potential for cultural and educational tourism like photo safaris, hunting safaris, bird watching, water sports, desert trekking, mountain camping, ecotourism, health tourism (cool climate and availability of hot springs), conference

tourism etc (Berhanu 2003; Martin 2008). Henze (2007:3) has pointed out the ecotourism Potential of Ethiopia as:

> *Ethiopia's mountains are almost untouched by climbers; Ethiopia's lakes have many varied features of great interest to tourists; birds, wildlife, vegetation, colorful ethnic groups, historical churches and monasteries, unusual geological features, caves local arts and artifacts of the country are among the major ecotourism resources.*

Ecotourism is still in its infancy in Ethiopia, but it holds significant potential for growth. The country's biodiversity is quite unique compared to neighboring countries, some of which are famous safari destinations. Ethiopia's protected area, which includes national parks, game reserves, wildlife sanctuaries and controlled hunting grounds, covers about 14% of the country. The protected areas offer ecotourism and leisure activities such as wildlife viewing, trekking, mountaineering and bird watching (Henze 2007; Martin 2008). There are some promising community based ecotourism initiatives like Adaba -Dodola, which is financially and technically supported by the German Agency of Technical Cooperation or GTZ on the northern slopes of the Bali Mountains in Oromia National Regional State (Sisay, 2004:1-2) and Semien Mountain (a pilot ecotourism project on Semien Mountain National Park) (ANRS BoFED, 2009:226). The Ecotourism Association of Ethiopia, which was founded in 2003 by committed organizations of the private sector, is basically formed to promote the principles ecotourism and eco-efficient initiatives in order to address the challenges faced by the tourism sector (EAE, 2008).

2.11 Forest Degradation in Ethiopia

2.11.1 Forest resource of Ethiopia: Past and Present

Ethiopia is a country mainly known for it's physiographic, altitudinal, climatic and edaphic diversity. Due to this diversity, there are different types of vegetation ranging from Alpine to semi-desert and desert plant communities (Sahle 1984). Gebre Markos (1998:28) added *"historical evidences revealed that a few hundred years ago more than 63% of the total land mass of Ethiopia was covered by dense forests but it is not greater than 3% now."* Many Scholars like Sahle (1984), Bagede (2001:2) and Berry (2003) explained that due to continuous

and indiscriminate lumbering and felling for fuel and replacement of forests by agricultural land have left the country with very limited forest resources. Around 160,000 to 200,000 hectares of forests are cleared every year for agricultural use, for fuel wood and other reasons. If this rate of deforestation continues, the existing forest resources of the country will disappear by the year 2020 A.D.

2.11.2 Significance of Forest

Curry-Lindahl (1972), Sahle (1984), Gebre Markos (1998), Demele (2001) and Tsegaye (2006:20-24) described the role of forests in their works as - vegetation has an important role in maintaining the productivity of the environment; trees provide food for animals a standing cover to protect the land from wind and water erosion, stabilizing the water cycle, facilitates the process of evaporation and keeps the soil porous, etc. They also used for construction as well as for tools, furniture, for fuel, medicine, grass and herbage for forage and provide edible fruits. They serve for absorbing carbon-dioxide so that reduce global warming, give off oxygen, renewing the atmosphere. Plants also serve as source of income by attracting tourists-serve as recreational facilities; prevent lakes and dams from silting; clean, regulate and distribute water resources.

2.11.3 Main Causes of Deforestation in Ethiopia

The forest resource of Ethiopia is probably changing more rapidly at present than any time in human history due to the interference of human being. Deforestation in Ethiopia occurs when locals clear forests for their personal needs, like fuel, hunting, agriculture, housing development, etc (Demele, 2001; Badege, 2001:13). The main causes of deforestation include population pressure (expansion of Agricultural land), overgrazing, timber cutting for construction, fuel and wildfire (*"seded isat").*

Population pressure: - In Ethiopia, the rapid rate at which the population increased (2.6% annually - 2007 population census report), is among the main factors that contributes to high rate

of deforestation. The need for cultivated land, wood for fuel and wood for construction materials increased with rapidly growing population (Berry, 2003).

Over grazing: - The wood biomass resources of the woodland and bush lands have been rapidly depleted by an increase in the livestock population. Over grazing mainly by ruminants cause irreparable damage to young seedlings (Gashaw, 2001).

High need of Construction Material and Fuel: - Ethiopia's deforestation problem is more aggravated by the great dependence of the population on biomass as a source of energy. Wood has been the single most important source of energy both in urban and rural Ethiopia (Badege, 2001:12). The way of using forests for timber is not well developed. Chonjnachi (1963:35) explained that *"…in Ethiopia even though there is very good timber, they spoil a complete tree by using a wood-splitting wedge in order to get a few boards. The rest of the trunk is chipped into small pieces due to absence of modern splitting instruments."*

Wildfires *("seded isat")*:- Clearing and burning of forests and woodland savannas during the dry season for the expansion of cultivable and grazing land, for charcoal production and for honey production has been one of the major causes of deforestation (Gashaw, 2001). Cury-Lindhal (1972:131) underlined the effect of wildfire as-

> *… grass lands and forests in many parts of the world are exposed to human mad fires. Farmers start bush fires regularly in order to burn off dry, old grass to produce ashes valued for the nutrients they added to the soil, or to kill weed seeds. Livestock owners burn dry grasses, so that fresh new grass will shoot up to provide pasture for cattle. Hunters also burn the dry grass because the new green shoots attracts grazing antelopes, which make easy targets for snaring or the hunters to drive out animals for hunting.*

2.11.4 Consequences of Deforestation

Studies by Curry-Lindahi (1972), Demele (2001) and Gashaw (2002) clearly indicated the effects of deforestation as follows:-

- ✓ Change of micro/macro climate and in hydrological cycles,
- ✓ Causes the disappearance of wild animals, birds and reptiles,
- ✓ Affects the natural beauty of an area,
- ✓ Accelerates run off and soil erosion- soil loss by water erosion range from 3.4 to 84.5 tons/year/ha with a mean of 32 tons/year/ha due to land degradation-twenty or more times replacement rates (Berry, 2003).
- ✓ Shortage of rainfall, increase in siltation of dams and reservoir,
- ✓ Results and increase in carbon dioxide that in turn causes an increase in temperature, causes for extinction and loss of economically important indigenous plant and animal species,
- ✓ Land degradation greatly affects agricultural productivity and production.

CHAPTER 3

DESIGN OF THE STUDY (METHODOLOGY)

3.1 Research Type

Since the study focused in assessing the potential (opportunities) of Borena-Saynt Park for the development of community based ecotourism and to identify the major conservation problems (challenges) of the natural resource, descriptive survey type of research were used. This method or type of research is commonly conducted to collect detail description of existing phenomena with the intent of employing data to justify current conditions (to investigate phenomena in their natural setting) and whenever possible to draw valid general conclusions from the facts discovered (Koul, 2006:432).

3.2 Target Population, Sampling Methods and Samples

3.2.1 Target population

Borena wereda was selected purposefully for this research because much of the remaining forest resource is found within this wereda though it shares certain boundary with that of Saint Wereda. The subjects (target Populations) of the study were workers of natural resource protection department, information offices, and tourism office (both from Borena wereda and South Wollo Zone), Borena wereda administrators and agricultural office principals, local communities living near to the forest resource [mainly from *Miskabe, Fati Janeberu, Abu, Jelisa Libanos, Anferfra, Chiro Cherkos, Chiro Kadis, Dega Dibi and Hawey Betaso* kebeles], elders living around the forest area, kebele administrators, kebele youth association leaders, and kebelle development agents from the above mentioned kebeles.

3.2.2 Sampling Methods and Samples

The samples were selected using both **purposive (available), cluster and volunteer sampling** methods.

- Responsible workers both form South Wollo zone and Borena wereda were included in the study **purposefully (available sampling**) because the researcher believed that they have better information regarding the issue under investigation and they are small in number. Totally 17 individuals from Borena Wereda and 13 individuals from South Wollo administrative Zone were participated in Focus Group Discussion.
- Information was also collected from five volunteer elders living in the surrounding areas of the Park based on **volunteer sampling**.
- Villages in Borena wereda (which are located near to the Park in the form of cluster) mainly form *Miskabe, Fati Janeberu, Abu, Jelisa Libanos, Anferfra, Chiro Cherkos and Chiro Michael* kebeles, were selected using **cluster sampling** and all household heads were included in the study. The selection procedures were:-

- First, 17 villages, with 482 house hold headss, which are very close to the Park and have direct impact on its resources were identified from the nine kebeles (on Boerna Wereda side) with the help of development agents and data enumerators ;
- Second, code was given to each village starting from 01 up to 17;
- Third, 47% or 8 villages were selected using lottery system to minimize the degree of bias (the decision (47%) was based on personal judgment);
- Lastly, all household heads (201) with in the selected villages were included in the study. But due to different practical problems only 160 households were participated in this research (the time was peak season for farmers).

3.3 Data Collection: Methods and Tools

The main data gathering devices and methods used in this study were:

- **Questionnaire**- different types of structured questionnaire were prepared by the researcher and information was collected from respondents (local community) after translating in to Amharic (for easy communication) with the help of enumerators (11and 12 grade students of

Borena preparatory school that were recruited from aforementioned kebelles) after giving a one day training on how to collect information from sampled household heads based on the questionnaire.

- **Focus group discussion (FGD)**: - there was focused group discussion with the following key informants using semi-structured checklist.

FGD 1	FGD 2	FGD 3
kebele administrators and kebele youth association leaders	Workers in agriculture, tourism and information office and kebele development agents at wereda level	workers in agriculture, tourism and information office at zonal level

- **Field observation**- direct field observation of the study area was conducted by the researcher. Digital photo camera and Global Positioning System (GPS) were used during field observation.
- **Document Analysis**- documents (like reports and minutes) both from Borena wereda, South Wollo zone Agricultural office were analyzed. Polices, rules and regulations of the country and the region regarding tourism, rural land use, forest protection and ownership has been analyzed.
- **Interview: -** information was also gathered from elders using semi-structured questioners (supplemented by tape recorder). The Interviewees were assured of the confidentiality of their response up on introduction.

3.4 Data Processing and Analysis

The information gathered from important sources using questionnaires, interview, focus group discussion, documentary analysis and field observation has been triangulated and organized in to manageable manner using tables (based on similarity of the issue) in order to make the analysis easy with the help of Statistical Package for Social Science (SPSS version 15). Based on the organized data, analysis has been undertaken both qualitatively and quantitatively. The analysis has been supported by actual photographs. Finally conclusions and feasible recommendations have been drawn based on the major findings of the analysis.

CHAPTER 4: RESULTS AND DISCUSSIONS

This chapter deals with the major findings of the study; mainly ecotourism resources of Borena-Saynt Park (both natural and cultural); socio-economic situations and problems of the local communities and their impacts on the resources of the park; how local can be beneficiaries if community based ecotourism is developed on the park; major opportunities and challenges for the development of ecotourism on the park.

4.1 Ecotourism Resources in and around Borena-Saynt Park

Ecotourism resources are natural and cultural features that attract visitors like landscapes, flora and fauna, cultural festivals, local artifacts, historical monuments and etc (Edelman, 2006). From this point of view, the following basic ecotourism resources have been identified in and around Borena-Saynt Park.

4.1.1 Natural Ecotourism Resources

4.1.1.1 Scenery (landscape, cave, waterfall)

The landscape of Borena-Saynt Park is composed of rough topography, deeply incised valley, escarpments and plateau, cone shaped peaks and fascinating cliffs. The topography of the area and amazing peaks like *Kabu Kora, Mossebit, Galokab, Shiftoch Kora, Gulas, Kerkeha Ras* that are covered with trees and tall grass can be attractive sites for tourists. These magnificent peaks also serve as a natural watching tower for tourists. Along the cliff, that separates the afromontane forest from the upper part of the park, there are around six caves (namely *Alebachew washa, Wof washa, Midir Washa, Gashaw washa, Abaye Washa and Amare washa*). Alebachew washa, situated at $10^0$52’39’’ N and $38^0$47’15” E at elevation of 3155 meter, is the largest one and it was used as a detention room for more than 11,000 political convicts by Ethiopian Peoples’ Revolutionary Democratic Front (EPRDF) during the 1991 Ethiopian civil war (Woldegabriel, 2003:10). Further archeological investigation should be undertaken in order

to know the nature of the caves. Denkoro stream (tributary of Abay River) originates from the upper side of the park and separates Saynt wereda and Borena wereda. There are two small but admiring waterfalls on this river. (See figure 4 for some of the natural ecotourism resources).

Figure 4: Some Fascinating Sceneries of the Borena -Saynt Park

A. The Gate of the largest cave (*Alebachew Washa*) (*From Borena Wereda Tourism Office)*
B. A cone shaped peak in side the park
C. Over view of "*Denkoro Stream*" (viewed from the upper part of the park)
D. Upper part of the park
E. Sunset - Viewed from the upper part of the Park

4.1.1.2 Flora

Due to the altitudinal range of the park from hot zone (*kola*) to cold zone (*wurch*), it encompasses afromontane forest in its lower part and sub-afro alpine and afro alpine vegetation types in its upper part. The afromontane one is a narrow strip of forest and its occurrence is largely restricted to Borena wereda. It is dominated with big trees and different types of shrubs. The afro alpine and sub-afro alpine part is dominated by species of Erica trees and shrubs, interspersed with tussock grass or Guassa (Festuca spp.) and Lobelia *rhynchopetalum* populations (Abate, 2003). The incredible vegetation resources of the park are main ecotourism resources. According to PaDPA (2006:4) and Abate (2003), there are around 66 families consisting of 174 species of plants which is higher species diversity in comparison to other afromontane forests of the country. The forest is in its pure naturalness, accounting nearly 100 percent of indigenous trees and shrubs. *Gaint lobelia* (Gibera), *Bidens pachyloma* (Adey-Abeba), *Plectocephalus varians* (Este-yohannis), *Euphorbia dumalis), Acantus sennii (*Shekori*), Solanacio gigas* (Yeshikoko Gomen*), Echinops longisetus and Echinops kebericho* are endemic to Ethiopia (Negash, 2002; Abate, 2003; Woldegabriel, 2003:10). Both the Afromontane forest and the upper part of the park have a very attractive view for tourists. (See figure 5 and Annex 9 for the major flora type of the Park).

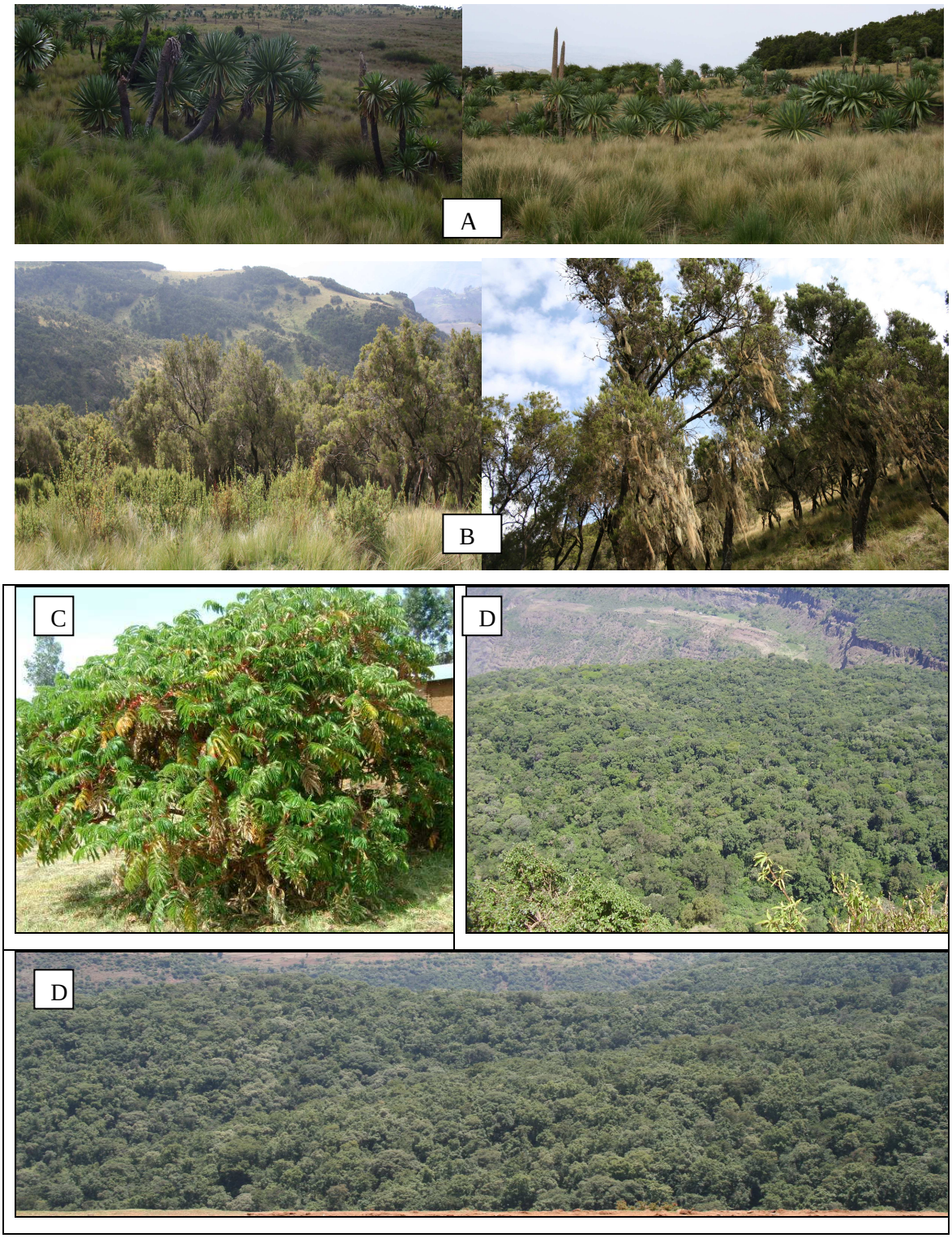


Figure 5: Flora of the Borena - Saynt Park

A. Festuca spp. (Guassa) and *Gaint lobelia (Gibra)*
B. *Erica arborea* (Asta)
C. *Hageniaia abyssinica* (Kosso)
D. Dense afromonatane forest (Lower part of the Park

4.1.1.3 Fauna

Borena Saynt Park, apart from its marvelous scenery and diversified flora, is a home of different mammals, amphibians and birds. More than 23 mammals and over 77 different birds have been identified (PaPDA, 2006; Lakew and et.al, 2007). Four large mammals, namely Ethiopian wolf or key Kebero (Canis *simensis),* Ghilada baboon (Theropithecus *gelada),* Stark's Hare (Lepus *starckii*) and Meniliki's bushbuck (Tragelaphus *Scriptus menllikii*) are found in the park. Based on preliminary studies undertaken by different scholars (Negash, 2002; Woldegabriel, 2003; Abate, 2003; and Lakew et al, 2007:16), the park is endowed with different birds. Among the recorded bird species in the park, over 10 of them are endemic to Ethiopia. *Harwoodii Francolin* a globally threatened species is found only in Amhara National Regional State and Borena Saynt Park could be probably the only place to protect this species (Lakew et al, 2007:17). See figure 6 and Annex 7 & 8 for detail types of Fauna species of the Park.

Figure 6: Some Endemic Mammals found in Borena-Saynt Park

A. Ethiopian wolf (Canis *simensis)*

B. Ghilada baboon (Theropithecus *gelada)*

C. Stark's Hare (Lepus *starckii*) (from Lakew et.al, 2007:18)

4.1.2 Cultural Ecotourism Resources

The major cultural ecotourism resources include lifestyle of the local community, archeological sites, distinctive cultural patterns, local arts and handcrafts, cultural festivals, museums, interesting economic activities etc (ANRS tourism commission, 2005). There are distinctive local cultures that are practiced by people living around Borena-Saynt Park. Even though it needs further and detail investigation, the cultural activities and cultural products like the wedding ceremony, honeymoon ceremony after marriage, local music and dances, locally produced artifacts, house construction style, local conflict resolution mechanisms by elders, community's traditional life style etc can be good tourist attraction resources. Local communities can, therefore, earn income by demonstrating cultural activities or by selling locally produced artifacts to tourists. Cultural products include artifacts made from animal horn, traditional garment and wool, jewelry, pottery, wood, embroidery, netting, weaving, basketry, calabash, traditional leather craft products, etc. Figure 7, 8 and 9 depict some of the cultural ecotourism resources available around Borena -Saynt Park.

Figure 7: Cultural Manifestations of Borena Wereda (*From Borena wereda Tourism Office)*

A. Decorated horse used for transportation in wedding ceremony

B. The bridegroom with his accompany marching to the bride's house

C. Local music by youngsters during marriage ceremony

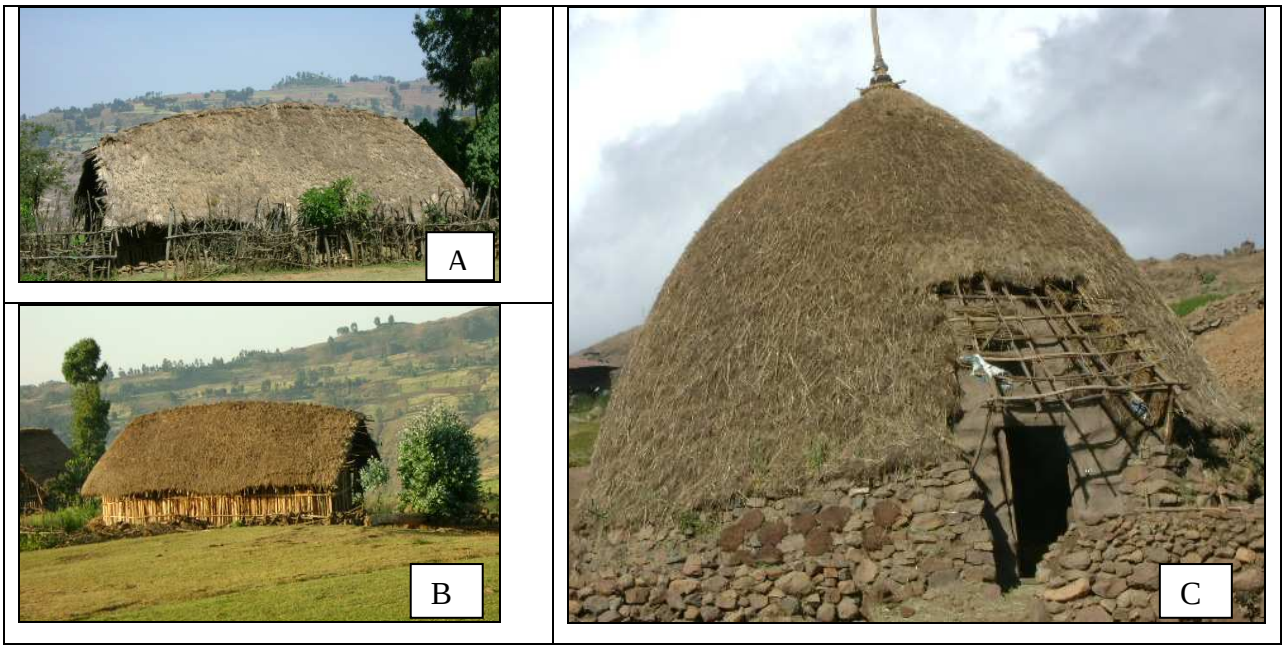


Figure 8: Typical type of house Constructed from wood, stone and thatched grass.

(A and B near to the Park, C in *Gimba*)

Figure 9: Some Local products (To be market resources for tourist)

A. Artifacts made by elementary school students

B. Products of micro and small scale enterprises used as a uniform

4.2 Socio - Economic Situation of the Local Community near to Borena-Saynt Park

The kind of economic activity practiced in a certain area has direct and indirect impact on its natural resources. The following discussions focus on the major socio-economic activity of the locals near to Borena-Saynt Park and how it affects the resources of the park.

Table 3: Responses on Primary and Secondary occupation of sampled respondents (N=160)

Activities	Primary Occupation		Secondary Occupation					
			First		Second		Third	
	N	%	N	%	N	%	N	%
Crop production	41	25.6	13	9.2	1	1.5	-	-
Animal husbandry	5	3.1	31	22.0	8	12.1	3	11.1
Mixed farming	104	65.0	1	0.7	2	3.0	-	-
Trading	-	-	7	5.0	13	19.7	4	14.8
Fuel wood selling	-	-	3	2.1	3	4.5	1	3.7
Tailor	-	-	-	-	-	-	2	7.4
Handicraft/blacksmiths/ Carpenter	2	1.3	5	3.6	2	3.0	5	18.5
Local liquor brewer	5	3.1	7	5.0	23	34.8	-	-
Daily laborer	3	1.9	2	1.4	5	7.6	3	11.1
Apiculture	-	-	72	51.0	9	13.6	9	33.3
Total	160	100.0	141	100.0	66	100.0	27	100.0
None			19	-	94	-	133	-

As depicted in table 3, the primary economic activity of the respondents is mixed farming (65.0%). Regarding with their secondary occupation, Apiculture (45.3%), local liquor brewer (34.8%) and handicraft/carpenter (18.5%) are the first, second and third ones respectively. 19 (11.9%) respondents have no any secondary occupation while 94 (58.8%) and 133 (83.1%) respondents have no second and third secondary occupation respectively. The local communities are mainly engaged in crop cultivation and rearing of animals. The major non-timber activity by

local community on the park is bee keeping. According to Woldegabreil (2003:28), the major economic activity of the locals living around the park is mixed farming. Honey collection from traditional beekeeping and a certain artisan activities have their contribution in a few households.

Table 4: Responses on major source of grazing land for their domestic animals (N=155)

R.N	Source	First		Second		Third	
		N	%	N	%	N	%
1	Own grazing land	88	55.5	14	9.1	34	24.1
2	Government owned grazing land	7	4.5	40	26.0	15	10.6
3	Grazing land rented	16	10.3	45	29.2	26	18.4
4	Other PA or Wereda	-	-	2	1.3	-	-
5	Cut and carry	5	3.2	7	4.5	33	23.4
6	Communal grazing land	41	26.5	46	29.9	33	23.4
	Total	155	100	154	100	141	100

Rearing of domestic animals mainly cattle and sheep is practiced in the area (for specific numbers see annex 5). The major source of grazing land (Table 4) for the sample respondents was their own private land (55.5%). Their secondary sources were communal grazing land (29.9%) followed by grazing land rented from other (29.2%) and government owned grazing land (26%). Cut and carry method was the third alternative method for 23.4% of the respondents. The economic activities of the local communities are highly dependent on exploitation of natural resources. Off-farm activities are not well developed in the area. Locals, due to the nature of their economic activity, use the park resources in different ways as a grazing land, land for cultivation and source of forage for their livestock. Diversifying the livelihood of the residents adjacent to the park helps to minimize the pressure on the park. This is the fact that the more fulfilled the livelihood systems of the local people living near to the park, the less likely it is that these people will look to over exploit the natural resources. Ecotourism development, there fore, can be one alternative to diversify their livelihood.

Table 5: Respondents response on the size of their grazing land in the last five years (N=160)

Size of grazing land	Responses		Cause, if "decreased"	N	%
	N	%	A. Grazing land changed in to farm land	34	27.2
Increased	4	2.5	B. Grazing land reallocation due to population growth	12	9.6
Decreased	125	78.1			
No change	30	18.8	C. Grazing land changed in forest land	27	21.6
Missing	1	0.6	D. All except C	52	41.6
Total	160	100	Total	125	100

As depicted in table 5, 78.1% of the house holds responded that the size of their grazing land have been decreased mainly due to the cumulative effect of change of grazing land in to farm land and reallocation of the grazing land as a result of population pressure (41.6%). Due to this, the locals encroach to the park for grazing land and to collect forage for their livestock.

Table 6: Major Problems of the sampled households related to rearing of Animals

R.N	Problems	Yes		No		Total	
		N	%	N	%	N	%
1	Shortage of forage	151	95.0	8	5.0	159	100
2	Shortage of drinking water	43	27.0	116	73.0	159	100
3	Grazing land competition by free grazing animals	72	45.3	87	54.7	159	100
4	Shortage of grazing land	151	95.6	7	4.4	158	100

Shortage of grazing land (95.6%) and forage (95%) for their livestock were identified as their basic problems related to rearing of animals (table 6). Elders during interview, and Kebelle administrators during focus group discussion, have identified change of grazing land in to farm land as a major land use change in their locality. When grazing lands are used for farming activities due to population pressure and soil fertility reduction, the pressure exerted by livestock population on the forest resources also increase. That means, when grazing lands are used for cultivation activities, the locals seek on the forest resources for grazing and as a source of forage for their live stocks.

Table 7: Major Type of energy used for cooking at household level by sampled respondents and major source of fuel wood (N=160)

R. N	Type	First		Second		Third		Source of wood for fuel		
		N	%	N	%	N	%		N	%
1	Wood	149	93.1	10	6.3	1	0.6	Own plantation /home stead	78	49.1
2	Shrubs &leaves	-	-	29	18.1	108	69.2			
3	Crop residue	-	-	2	1.3	13	8.3	Kebele or community forest	53	33.3
4	Animal dung	11	6.9	118	73.8	24	15.4			
5	Charcoal	-	-	1	0.6	-	-	State or organization forest	28	17.6
6	kerosene	-	-	-	-	10	6.4			
	Total	160	100	160	100	156	100	Total	159	100

The primary, secondary and tertiary types of energy used for cooking purpose (table 7) were fire wood (93.1%), animal dung (73.8%) and shrubs & leaves (69.2%) respectively. 49.1% of the respondents have indicated own plantation as source of wood for fuel while 33.3% and 17.6% used kebelle or community forest and state owned forest respectively (table 8). Woldegabreil (2003:28) has also indicated that firewood and dung cakes are the major sources of fuel in the area and absence of alternative source of energy force local communities to deplete the scanty wood resources of the forest. Even though the pressure on the forest for fire wood has decreased due to own plantation on the home stead, still there is a need to use the forest resource for fire wood by the local community.

Table 8: Modern fuel saving stoves usage and Determinant factors for the sampled respondents (N=160)

Are you using fuel saving stoves?	N	%	Determinant factor(s), if "No"		
			Factors	N	%
Yes	35	21.9	Lack of access	26	20.8
No	125	78.1	Financial constraint	16	12.8
Total	160	100.0	Lack of knowledge	30	24.0
			All	53	42.4
			Total	125	100.0

Improved fuel efficient stoves help to reduce pressure on the biomass resources including forests; increase land productivity by reducing crop residue and dung usage for fuel wood and improve family health (EEPA, 2004). Using fuel saving merit stoves was not common in the study area. Only 35 (21.9%) of the respondents were using fuel saving stoves. Kebelle Development agents also confirmed during group discussion that, even though there are some initiatives recently, most of the farmers did not use modern fuel saving stove due to lack of knowledge and lack of access. Both lack of access, financial constraint and lack of knowledge were the major determinant factors for 42.4% of the respondents while lack knowledge, lack of access and financial constraint separately accounts for 24%, 20.8% and 12.8% respectively.

In Ethiopia, fuel wood is the major energy source and over 90% of the country's total energy for household cooking is derived from biomass fuels, of which wood provides 78%. The high biomass energy consumption has created deforestation, biodiversity loss and land degradation (EEPA, 2004). According to EEPA (2004), improved charcoal stove (*Lakech*) and biomass closed *Enjera* stove (*Gounzie*) save up to 25 percent and 47 percent over traditional stove and open fire stove respectively. The weighted average annual per capita energy consumption for households is 1.2 m^3. The wood consumed for fuel and construction purposes comes from high forests and wood lands as well as trees planted on farms and plantations. Using dung as a source of fuel, contributes to the reduction of soil fertility and grain production (Tsegaye, 2006:26). Ecotourism development, there fore, enables the locals to earn additional income so that they can use fuel saving stoves. This in turn minimizes their consumption of fire wood and pressure on the forest of the park for the need of additional fire wood.

4.3 Major Problems for the Development of Community Based Ecotourism on Borena-Saynt Park

In this part, the major socioeconomic problems of the local communities that have impact on the resource of Borena-Saynt Park and that would probably affect the development of ecotourism development on it have been discussed.

Table 9**:** Major Problems of local community on agricultural activity (N=160)

R. N	Problems	First		Second		Third	
		N	%	N	%	N	%
1	Shortage of farm land	69	43.1	14	8.8	13	8.6
2	Soil fertility reduction	48	30.0	60	37.7	32	21.2
3	Scarcity of grazing land	30	18.8	62	39.0	33	21.8
4	Expensiveness of agricultural inputs	13	8.1	18	11.3	46	30.5
5	Market problem for outputs	-	-	5	3.2	27	17.9
6	Total	160	100	159	100	151	100

As indicated in table 3, the major activity of the house holds is mixed farming that consists both rearing of animals and cultivation of crops. With this regard, as one could observe form table 9, shortage of farm land (43.1%) and soil fertility reduction (30%) were identified as their primary problems followed by shortage of grazing land for their animals (39%) and expensiveness of agricultural inputs (30.5%) as second and third critical problems. The average agricultural land per household of the sampled respondents was 0.57 hectares (Annex 5). It is very low compared with the average land holding of both the Amhara National Regional state (1.16 hectares per house hold) and South Wollo administrative zone (0.76 hectares per house hold) (ANRS BoFED, 2009:136). The minimum amount of cultivable land to be given for an individual, according to the revised Amhara National Regional State rural land administration and use proclamation number 133/2006, should not be less than 0.2 hectares (Zikre Hig No.18/2006). The average household size of the sampled respondents was 5.2. With this family size, therefore, at least 1.04 hectares of cultivable land is needed for each house hold. The interviewees and focus group discussion participants also confirmed that shortages of cultivable land and low fertility of the soil have forced the households either to use their grazing land for farming or encroach to the forest to find cultivable land. Due to these problems and population pressure further expansion and encroachment of the park is inevitable. Community based ecotourism can be a potential source of economic development and poverty alleviation mainly in marginal areas with limited agricultural potential (Kiss, 2004) by diversifying the livelihood of the people. As a result of ecotourism development, different tourism related jobs and employment opportunities can be

created; market for locally produced artifacts and products can be created. All these help to minimize the pressure of the local communities on the park resources.

Table 10: Respondents' response on the size of Borena-Saynt Park in the last five years and causes of destruction

What is your observation on the size of the park for the last five years? (N=160)		
Size	N	%
Increased	30	18.8
Decreased	117	73.1
No change	8	5.0
I do not know	5	3.1
Total	160	100

If decreased , which one/s is/are the major cause/s (N=117)						
Cause	Yes		No		Total	
	N	%	N	%	N	%
Expansion of settlements into the forest	61	52.1	56	47.9	117	100
Overgrazing	103	88	14	12	117	100
Expansion of agricultural activity towards the forest	96	82	21	18	117	100
Fuel wood for market	70	59.8	47	40.2	117	100
Fuel for household and construction wood	58	49.6	59	50.4	117	100
Commercial wood	24	20.5	93	79.5	117	100
Forest fire	7	6	110	94	117	100

As shown in table10, 73.1% of the households responded that the size of the park has been decreased in the last five years. Overgrazing by livestock (88%) and expansion of agricultural activity towards the forest (82%) have been identified as major causes followed by fuel wood collection for market (59.8%), expansion of settlement towards the forest area (52.1%) and demand of wood for household fuel and construction (49.6). The impact of forest fire and demand of commercial wood for market were not identified as much critical problems.

Overgrazing of forest by livestock causes irreparable damage to young seedlings. 60% of the country's cattle and sheep fodder is driving from forest resources. Overgrazing is much more severe in the highlands compared to the low lands because almost 75 percent of the livestock population is found in the high lands (Tsegaye, 2006). According to the Wereda Agricultural and Rural Development office and PaPAD (2006:6), even though 36 hectares of farmland and 26 hectares of grazing land that were occupied illegally, have incorporated in to the park after giving the appropriate compensation to the farmers, still large part of the park which was changed in to farm land and grazing land was decided to be out of the demarcation considering the long run impacts of its incorporation into the park.

Table 11: Responses on the need of natural resources by Local communities from the park (N=160)

Are there natural resources that you need from the park?			Type of resource needed:	Yes		No		Total	
				N	%	N	%	N	%
			Wood for Fuel & construction	122	76.3	38	23.7	160	100
	N	%	Water for livestock	59	36.9	101	63.1	160	100
Yes	153	95.6	Water for irrigation	40	25.0	120	75.0	160	100
No	7	4.4	Wild animals for meat & skin	20	12.5	140	87.5	160	100
Total	160	100	Grass/leaves for animal forage	148	92.5	12	7.5	160	100
			Land for farming	66	41.3	94	58.7	160	100
			Apiculture (Bee keeping)	132	82.5	28	17.5	160	100
			Wood for pitsaw(market)	24	15.0	136	85.0	160	100
			Fuel wood for market	37	23.1	123	76.9	160	100
			Wood for charcoal	20	12.5	140	87.5	160	100
			Wood for utilities	145	90.6	15	9.4	160	100

The livelihood of the local community is highly dependant on exploitation of natural resources. As one can observe from table 11**,** 95.6% of the respondents needed natural resources from the park in one way or another. The most important resources that are highly needed by the respondents include grass and leaves for animal forage (92.5%), wood for farming and

household utilities (90.6%), the forest for bee keeping (82.5%), wood for fuel and construction (76.3%) followed by land for farming (41.3%). The need of water for livestock and irrigation, wild animals for their meat and skin, wood for commercial purpose and wood for charcoal were minimal. During field observation, the researcher observed that cultivation was expanded up to the edge of the forest, all steep slopes and gentle slopes were changed in to cultivation fields. There are no enough grazing lands to keep livestock population outside the forest. All these social problems enforce local people to over exploit the remnant forest resource (see figure 10, 11 and 12 for the pressures exerted by local communities on the park). One interviewee underlined the situation as:

> --- *as you can see [*pointing with his finger*], the land outside the park is highly degraded, there is no grazing land and the soil is infertile; so the locals are forced to use the resources of the park illegally mainly for grazing and farming. Now, it has been demarcated as a park. The government should find alternative solution for our problem; otherwise, its sustainability would be threatened by pressure from the local community.*

Ecotourism development on Borena-Saynt Park, therefore, helps to alleviate the major socio-economic problems of the local community through income generated from tourism related jobs, employment opportunities created as a result of it, access of market for locally produced artifacts and agricultural products. Ecotourism development also contributes for the development of infrastructures like road, health centers, educational facilities, etc. which are vital for the development of local communities. Organizations that are working on environmental issues also play a great role by introducing modern technologies (like modern fuel saving stoves, modern bee beehives), giving training for the local communities like alternative off-farm activities and production of local products for tourists. Diversifying the livelihood of the people living near to the park enables to overcome their pressure on the forest resources. When the locals obtain tangible benefits form ecotourism development on the park, they will actively participate in the management of the park's resources.

Figure 10: Settlement very close to park

Figure 11: Grazing by livestock (A) inside the Park and (B) close to the Park

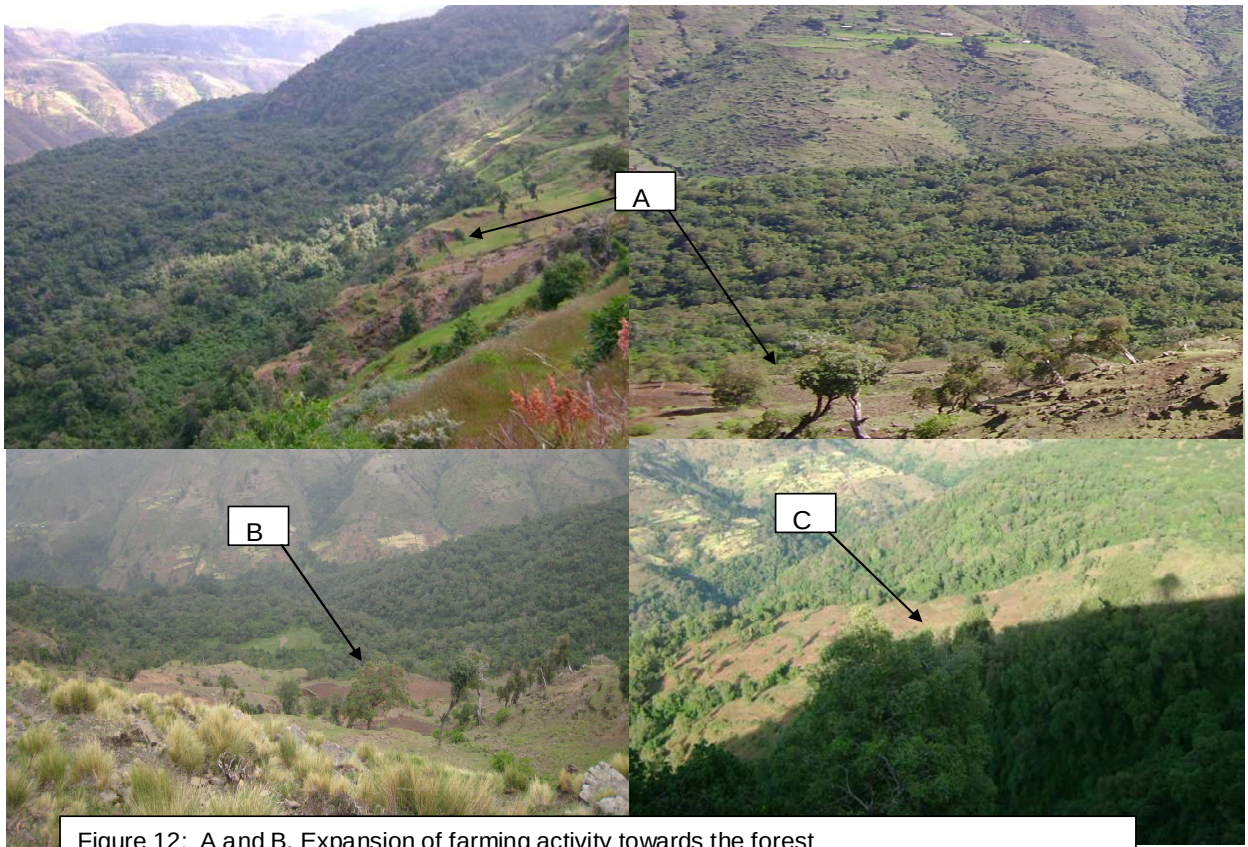


Figure 12: A and B. Expansion of farming activity towards the forest
C. Farming activity inside the forest - a year ago

Table 12: View of respondents on the level of natural resource degradation in and around Borena-Saynt Park (160)

Type of degradation	Level of natural resource degradation									
	Not at all		Low		Serious		Very serious		Total	
	N	%	N	%	N	%	N	%	N	%
Deforestation	46	28.8	19	11.9	79	49.4	16	10.0	160	100
Overgrazing	48	30.0	30	18.8	56	35.0	26	16.3	160	100
Hunting	121	75.6	33	20.6	6	3.8	-	-	160	100

The level of forest destruction and overgrazing in and around Borena Saynt Park, as depicted in table12, were at serious level while that of wild animal depletion or hunting was not identified as a problem. Large areas of the surrounding environment are exposed to sever land degradation and soil erosion (see figure 13). Lakew et al (2007:15) also described the park as *"Denkoro forest [*Boren-Saynt Park] *can considered as an island of valuable conservation area surrounded by biodiversity crisis"* to emphases how the surrounding area of the park is highly degraded. According to Andrson (1996:11), environmental degradation is partly caused by local people who encroach on forest areas for timber or clear land for agriculture. Due to severe land degradation adjacent to the park, according to the Wereda agricultural and rural development office and Kebelle Development Agents, locals exert pressure on the park for need of cultivable land, grazing land and fire wood.

Figure 13: Highly degraded land adjacent to the Park

If alternative employment opportunities are extended to local villagers as a result of ecotourism development, they will no longer need to damage nature as a source of income. Rather, benefits to local participants provide incentives for protecting ecotourism resources for sustainable use. According to Doria and Rosendo (2003), the premise of community based ecotourism is that economic benefits from socially and ecologically responsible tourism will encourage local population to protect natural ecosystems and their biodiversity. That means, revenue generated from ecotourism could be substantial and can be used to provide alternative employment or/and income to local residents. This alternative employment also helps to reduce the pressure on encroachment and environmental destruction by the local people.

Table13: Response of local communities on their involvement of in Natural resource management and Determinant factors (N=160)

	Yes		No	
	N	%	N	%
Do you think that deforestation is a problem in your locality?	126	78.8	34	21.2
Are you responding to deforestation?	144	90	16	10

					Determinant factor/s if the answer is "No" for each mechanism					
Mechanisms used if the response for responding to deforestation is "**yes**"	Yes		No		Shortage of farming land		Financial constraint		Lack of knowledge	
	N	%	N	%	N	%	N	%	N	%
Planting trees	133	85.8	22	14.2	21	95.5	1	1.5	-	-
Using modern source of energy	12	7.8	142	92.2	4	2.8	117	82.4	21	14.8
Using control grazing	92	60.1	61	39.9	8	13.1	3	4.9	50	82.0
Applying modern farming mechanism	76	49.4	78	50.6	6	7.7	21	26.9	51	65.4

As shown in table 13, 78.8% of the household heads agreed that deforestation is a problem in their locality and 90% of them responded that they are taking some sort of corrective actions. The most common activities preformed by local communities to mitigate degradation include planting of trees (85.8%) and by controlling free grazing (60.1%). Financial problem (82.4%) for

using of modern source of energy, shortage of farming land (95.5%) for planting trees and lack of knowledge (82%) for control grazing were identified as the most critical problems that hinder locals in their effort of controlling land degradation. During field observation, the researcher observed that planting trees near to homesteads mainly eucalyptus is common. Even though, it has its own contribution in decreasing the pressure on the forest resource of the park basically for fuel wood and construction material, planting of different trees that are used for animal forage and that increase the fertility of the soil was not practiced. The respondents consider planting of trees as land consuming. But different agro forestry activities can be applied with out affecting the availability of cultivable lands and grazing lands. On the contrary, such activities play a great role in minimizing the pressure of the locals on the park's resource by providing fodder for their animals, fuel wood for household consumption and by increasing the fertility of the land.

Table 14: Respondents' response on illegal encroachment to the park by local communities

Is there any form of illegal encroachment on the park by local communities?			Reason of encroachment. For the need of:-	Yes		No		Total	
				N	%	N	%	N	%
	N	%	Fuel wood	128	80.0	32	20.0	160	100
Yes	132	82.5	Construction wood	73	45.6	87	54.5	160	100
No	28	17.5	Charcoal production	18	11.3	142	88.8	160	100
Total	160	100	Pitsaw	45	28.1	115	71.9	160	100
			Grazing land	128	80.0	32	20	160	100
			Cut and carry of grass	107	66.9	53	33.1	160	100
			Farming land	77	48.1	83	51.9	160	100

R. N	Who do illegal encroachment?	First		Second		Third	
		N	%	N	%	N	%
1	Land less people	79	59.8	11	8.5	8	6.4
2	Who have connection with timber merchants	10	7.6	15	11.6	3	2.4
3	People who do not produce enough production	31	23.5	62	48.1	20	16.0
4	Rich people	7	5.3	26	20.2	18	14.4
5	Women	-	-	11	8.5	70	56.0
6	Community as a whole	5	3.8	4	3.1	6	4.8
	Total	132	100	129	100	125	100

As shown in table 14, 82.5% of the respondents agreed that illegal encroachment to the park had been practiced by local communities. The major reasons for encroachment of the forest were for grazing land (80%), fuel wood collection (80%), cut and carry of grass (66.9%) followed by need of farming land (48.1%). Land less people (59.8%) were identified as primary encroachers followed by those who do not produce enough annual production for their family (48.1%) and women (56%) as secondary and tertiary respectively.

Figure 14: Cut and Carry of Festuca spp. (Guassa)

Table15: Reports to Borena wereda Agricultural and Rural development regarding illegal Encroachments to the park (1999-2001 E.C)

R.N	Issue	Number of cases	Percent
1	Cutting of trees for fuel wood and construction	18	23.1
2	Cutting of trees for pitsaw	6	7.7
3	Cut and carry of grass for thatch or/and forage	17	21.8
4	Grazing of livestock to the park	20	25.6
5	Forest fire	3	3.8
6	Charcoal production	1	1.3
7	Hunting of wild animals	-	-
8	Expansion of agricultural land to the park	13	16.7
	Total	78	100

Source: Borena Wereda Agricultural and Rural Development Office (files)

As indicated in table 15, 78 cases were reported to Borena wereda Agricultural and Rural development office regarding illegal encroachment to the park by local communities. The most

frequent illegal encroachments, based on the report were grazing on the park 20 cases (25.6%), cutting of trees for fuel wood and construction 18 cases (23.1%), cut and carry of grass and/or Guassa17 cases (21.8%) and expansion of farming activity to the forest 12 cases (16.7%). The reports show how grazing on the park, cutting of wood for fuel and high need of cultivable land were serious problems for the last three years.

Table 16: Responses on legal usage of resources form the park by the local community (N=160)

Did you use resources form the park legally for the last five years**?**			If "Yes", identify the Resource/s allowed(used) legally						
			Resource	Yes		No		Total	
Response				N	%	N	%	N	%
	N	%	Cut and carry of fodder for livestock	116	72.5	44	27.5	160	100
Yes	127	79.4	Cut and carry of thatched grass	125	78.1	35	21.9	160	100
No	33	20.6	Fuel wood collection	32	20.0	128	80.0	160	100
Total	160	100	Wood for construction	3	1.9	157	98.1	160	100
			Wood for utilities	19	11.9	141	88.1	160	100

Using resources legally has been allowed for the local community based on some critical problems like drought and if there is burning of house by fire. The main resources allowed include thatched grass (78.1%) and cut and carry of grass for livestock (72.5%). According to Borena wereda natural resource protection and management expert, grass and/or Guassa for thatching and for fodder is allowed based on the severity of the applicant's problem. According to the regulation No. 68/2009 (Zikire Hig 10/2009), cutting off plants, under taking agricultural works, letting domestic animals for grazing in the park, undertaking mineral exploration, hunting of wild animals, establishing dwelling houses, planting grinding mills, etc are forbidden in the park. But *"the local community may harvest grasses, collect fallen woods, keep beehives and utilize herbs from a state forest in conformity with the management plan developed for the forest by the appropriate body"* (Negarit Gazeta No. 56/2007). During field work, the researcher also observed that beekeeping is practiced (See figure 15) very close and inside the park. Even though

beekeeping has no as such negative impact on the forest resource, due attention should be given to minimize the probability of fire accident on the forest during honey collection.

Figure15: Traditional beekeeping (locally *zeda*) - practiced inside Borena Saynt Park

Table 17: Respondents Information about eco/tourism and its advantage (N=160)

Do you have information about the concept of tourism and its economic advantage?			If "yes" what was your source of information	N	%
			Media	31	31.3
	N	%	DA and Kebelle administrators	55	55.6
Yes	99	61.9	Experts from Wereda	13	13.1
No	61	38.1	NGOs	-	-
Total	160	100	Total	99	100

61.9% of the respondents have information about tourism and its contribution for conservation and economic development. Their sources of information were Development agents and kebelle administrators (55.6%) followed by media (31.3%) (table 17). This is a fertile ground for the development of ecotourism on the park.

4.4 Benefits of Ecotourism Development to the Local Community

One of ecotourism's greatest contributions to conservation is the degree to which it can shift community activities from the threats category to that of opportunities; that is those activities which contribute to sustainable development and the achievement of an area's conservation goals. Local communities will be beneficiaries from development of community based ecotourism on Borena -Saynt Park directly and indirectly. Some of the benefits of ecotourism development include:-

- Development of ecotourism on Borena Saynt Park can create job and employment opportunities for the local communities. They can participate in tourism related employments like guiding, accompany, kitchen staffs in lodge etc. Local communities could also involve in different job opportunities that are related with travel and tourism like hiring and pulling of pack animals, hire properties, sales goods and services, campsite homey stay (guest houses), provision of food and drinks for tourists (hotels, cafeterias).
- Ecotourism development can open market access for local products (it brings the market to home). Locals can sell both cultural artifacts and agricultural products either directly for tourists or hotel owners. The area is potentially rich for the production of highland fruits, vegetables, honey and butter as well as for fatting of sheep and goats. So that locals can earn income by providing their products for tourist serving hotels and tourists.
- Locals can either operate tourism related businesses individually, cooperatively or by forming joint ventures with private investors.
- Local communities can also earn income from tourists by demonstrating local music and dances, leasing their private land for private operators while simply monitoring the impact. "*Farmers have legal right to rent out part of their holdings to investors for not more than 25 years*" (Negarit Gazeta No, 84/2003).
- Development of ecotourism enhances the development of infrastructures like roads, communication networks, health facilities, power, clean water etc which are vital for the local community as well.
- Different NGOs could assist the community in different ways like training, development of alternative source of energy, by introducing different off-farm activities that enables for the diversification of the locals livelihood.

Generally, ecotourism development in the park can diversify the livelihood of the local community. Alternative sources of income for the locals help to minimize the pressure on the park's resources and become an incentive to enhance conservation programs. Regarding with the contribution of ecotourism for natural resource conservation Stem et al (2003:1) stressed as "*where ecotourism offers a viable economic alternative, tourism opportunities have induced people to abandon cultivated land, allowing forests to regenerate*".

4.5 Opportunities for the Development of Community Based Ecotourism on Borena-Saynt Park

Borena -Saynt Park, due to its impressive tourist attractive resources, has high potential for ecotourism development. In addition to the ecotourism resources the park endowed, the following situations could be good opportunities for the development of ecotourism.

- Legal status of ecotourism resources as internationally recognized diversity plays a great contribution for the flow of tourists in such areas. Legal status of any conservation area is crucial in order to have received international support both technically and financially (Woldegabreil, 2003). Borena-Saynt Park which was treated as a protected state forest, acquired a Park status starting from June 2009, considering its huge biodiversity importance (Zikre-Hig No10, 2009). Following its recognition as a park, the Amhara National Regional State Parks Development and Protection Authority (ANRS PaDPA) has opened a branch office in Mekane Selam and professional workers are recruited.
- High and increasing demand of tourists to Amhara National Regional State (ANRS). Most popular tourist sites of the country are found in Amhara National Regional State, most notably, the Semien Mountain National Park with its amazing scenery, and endemic biodiversity, the Rock Hewn churches of Lalibela, the Castle of Gonder, Lake Tana with its old-aged monasteries, the spectacular Blue Nile fall, Lake Hayk with its scenery, birds and monasteries, Ghishen Debre Kerbe etc (Briggs, 2003). Due to its potential for tourists, the flow of tourists to Amhara National Regional state has been increased (see table18). Borena-Saynt Park can be additional tourist destination site if promotion activity is undertaken.

Table 18: Trend of Tourist flow to ANRS and revenue earned between 2004/05-2007/08

Destination	Number of Tourists (both domestic and Foreign)				Income earned in Million Ethiopian Birr (rounding by the researcher)			
	2004/5	2005/6	2006/7	2007/8	2004/5	2005/6	2006/7	2007/8
Lalibela	89 951	118 170	120 032	129 462	17.88	19.55	19.55	27.55
BahirDar	23 986	25 219	33 644	38 530	9.70	9.22	9.74	12.26
Gonder	44 805	72 328	66 644	68 086	9.76	10.4	19.49	10.72
Debark	5 074	6 019	6 991	8 799	2.84	3.09	3.79	3.49
Dessie	ND	ND	5 169	ND	ND	ND	0.44	ND
Total	**163 816**	**221 736**	**232 480**	**244 877**	**40.18**	**42.17**	**53.03**	**54.02**

Source: ANRS BoFED (2009:56) ND. Data not available

- Rapid and efficient transport systems play a great role by giving tourists the chance to travel far and gain a greater knowledge of the world (Hayward, 2000). WTTO (1999:2) also underlined that infrastructure will be essential to sustain the quality, economic viability and growth of travel and tourism. The *Kombolcah-Gundewoin* road that connects Dessie with Bahir Dar via Mekane Selam is under construction. This road facilitates the flow of tourists to the park either from Addis Ababa, Bahir Dar or Dessie. Both Bahir Dar and Dessie are within the tourist circuit known as the "historical route" of Northern Ethiopia that comprises the most important tourist sites of Ethiopia (www. Ethiopia-tourism potential.html).
- The availability of different historical and cultural tourist sites. Different historical and religious sites are found around Borena-Saynt Park that could have additional tourist attraction potential. The ancient churches of *Tedibabelemariam* (in Saynt wereda), *Mertolemariam* (in east Gojjam Zone), *Gasicha Aba Giorgis* (in Kelalla wereda), ancient Mosque of Debat (in Borena wereda) and *Miskabe kidusan* with its holy water (in Borena Wereda, a few kilometers from the western edge of the Park) are among the religious resources that could be tourist sites. The Blue Nile gorge (figure 16), a few distance from the park, with its marvelous landscape can attract tourist.

Figure 16: Blue Nile (Abbay) Gorge (near to the Western edge of the Park)

- Ecotourism project development on *Mekdella Amba* - ecotourism project on Mekdella Amba has been under study by the tourism commission of ANRS in collaboration with Addis Ababa University. Since the two sites are geographically found very close to each other, it can be an advantage for tourists to visit both sites.
- Increasing concern for tourism at national and international level. International conservation organizations increasingly support community based ecotourism because of its financial and political contribution to the existence and management of the protected areas (Vieta, 1999). During the 1980's and 1990's, international aid and lending institutions like World Bank, Inter-American Development Bank and USAID, which view ecotourism primarily as an enterprise-based approach to conservation, were supporting a variety of ecotourism programs and projects. USAID has been, for instance, has been involved in a great deal of ecotourism projects because ecotourism fits within the agency's broad objectives of promoting national economic growth and conserving biodiversity (Buchsbaum, 2004:39). In the study area, Frankfurt Zoological Society is working in afro alpine ecosystem conservation program. The project is mainly concerned with the conservation of Ethiopian wolf. It also supports two nursery sites situated close to the park and lodge at the edge of the Park is under construction (see figure 17).

Figure 17: Lodge constructed by Frankfurt Zoological Society (at the edge of the Park)

4.6 Major Threats and Challenges for the Management of the Park and Development of Ecotourism on the Park

The future of conservation effort in Borena Saynt Park needs to be strengthened in order to ensure the sustainability of the remaining resources through ecotourism. The major conservation threats of the natural resources and challenges for the development of ecotourism on the park include:

- Absence of buffer Zone. The presence of buffer zone around protected areas and parks is vital for the sustainable conservation of natural resources (Lakew et.al, 2007). Borena-Saynt Park is surrounded with a degraded environment and the livelihood of local communities is solely dependent on traditional farming activities and rearing of animals. Such economic activities are mainly dependent on exploitation of natural resources. Due to scarcity of cultivable land and grazing land out side the park, the buffer zone up to the edge of the park is used either for farming activity or grazing land which is a threat for its sustainability.
- Infrastructure. A well developed and efficient infrastructure is vital for the development of the tourism industry. Absence of tourist standard hotels, underdeveloped road network development from Mekane Selam to the Park, poor communication networks around the park and absence of tourist facilities could be a hindrance factors for the development of ecotourism. Even though, the present expansion of different forms of infrastructures both in urban and rural areas is promising, more have to be done.

- The economic activities of the local community are highly dependent on subsistence agriculture. Shortage of grazing land and forage for livestock are critical problems of the locals. Due to land degradation, the productivity of the land is extremely very low. These problems, unless reversed, may impose pressure on the park's resources.
- Shape of the Park. The shape of the park is rectangular having an exaggerated length with a very narrow width along a mountain ridge. It is believed that parks and protected areas with such kind of shape are probably exposed to an edge effect problem and face difficulty of controlling or patrolling (Lakew et.al, 2007).

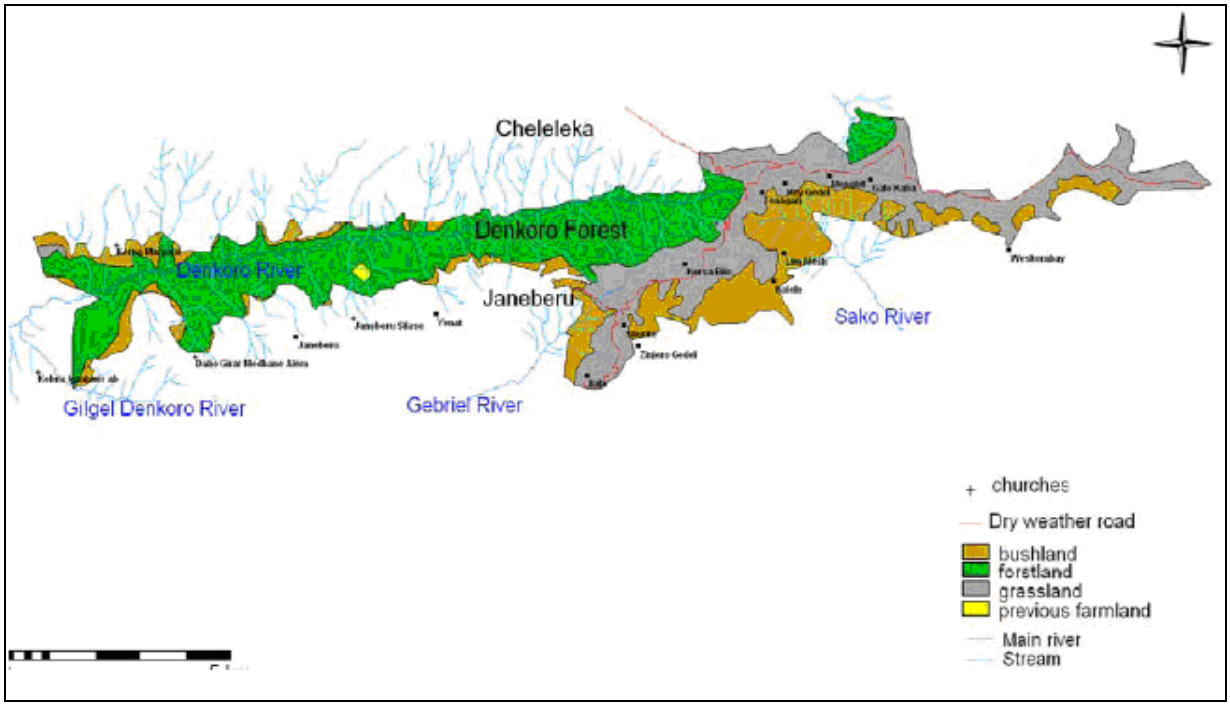


Figure 18: Shape of Borena Saynt Park (ANRS PaPDA, 2006 cited by Lakew et al ,2007)

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Even though natural resources in Ethiopia have great contribution for the development of tourism in general and ecotourism in particular, most of natural resources are highly exposed to degradation. Deforestation is one of the major factors contributing to land degradation by exposing the soil to various agents of erosion which in turn greatly affects agricultural productivity. Borena-Saynt Park in Borena Wereda, South Wollo administrative zone, is among the remaining forest resources of the Amhara National Regional State and it is one of the national state forest priority areas of Ethiopia. Borena-Saynt Park has been facing a number of threats due to increasing human population and livestock pressures like heavy grazing of under storey; the cutting of trees for construction, farm tools and fuel; expansion of cultivated area. Ecotourism could be a link between protected areas and local communities by generating income for local communities while achieving the conservation goals of protected areas (Henze, 2007). The experience of different countries revealed that ecotourism has played a great role as a viable strategy in sustainable natural resources management mainly forest, wildlife and soil.

This research was undertaken to assess the potential (opportunities) of Borena-Saynt Park for the development of community-based ecotourism that enables to sustainable forest management and to identify the main problems (challenges) related to the management of the resource. After analyzing the information gathered using structured questionnaire, interview, focus group discussion, documentary analysis and direct field observation, the following conclusions have been drawn.

- Borena-Saynt Park, with its magnificent scenery, waterfall, amazing caves, rich biodiversity of flora and fauna and cultural attractions, has high potential for ecotourism development. Caving, camping, trekking, bird watching, climbing, traveling along the

forest, photography, anthropology etc can be main tourist activities to be practiced on these resources.

- Up grading into Park status from protected area of the site, road network development, increasing flow of tourists to Amhara National Regional State, availability of different tourist sites around the park, encouraging investment policy of the country, high national and international concern for tourism/ecotourism are the major opportunities for the development of ecotourism on Borena-Saynt Park.
- Mixed farming is major economic activity of the local communities. Land degradation, soil erosion, scarcity of cultivable land, shortage of grazing land and lack of forage/fodder for their livestock are critical problems of the people living near to the park. Due to shortage of fuel wood, households use animal dung for fuel than for fertilizer which in turn affects productivity. Using energy saving stoves is not practiced. All these problems pose pressure on the park resources. The local communities need resources like grass and leaves for animal forage, wood for fuel, construction and utilities, land from the forest for farming and beekeeping.
- Some resources from the park like grass for forage and thatch are allowed for the local communities during times of critical problems.
- Soil and water conservation activities are not well developed around the park. Planting of trees near to the homestead are the major afforestation work done by the local community
- Absence of buffer zone. Due to scarcity of cultivable land and grazing land, the buffer zone up to the edge of the park is used either for agriculture or grazing. Areas which are very steep are nowadays used for farming, which aggravates soil erosion and land degradation.
- Infrastructural development around the park needs due attention. All-weather road from Dessie (Zonal capital) to Mekane Selam is under construction. There is dry weather road that connects the park with the nearby town (Mekane Selam). Even though pack animals can be used from Mekane Selam to the park, the road should be improved for those that prefer land transportation. There was air transportation both from Dessie and Addis Ababa to Mekane Selam five years back.

5.2 Recommendations

Based on the major findings of the study and conclusions drawn, the following possible recommendations have been forwarded**.**

1. The area has high potential for ecotourism. Ecotourism development is vital to assure the sustainable conservation of the park. Local people have to see real and tangible benefit from the park through generating monetary value and job opportunities. To that end, the Amhara National Regional State Parks Development and Protection Authority in collaboration with the weredas administrators and concerned bodies have to carry out the establishment of ecotourism project.

2. Since the park is a newly established one, extensive Promotion has to be done using electronics, websites, brochures and any other available means. Tourism commission at different levels, ANRS Parks Development and Protection Authority, information office at different levels and other concerned bodies should take the responsibility in promoting the park.

3. Infrastructure - the development of basic infrastructures like road and facilities like clean drinking water are essential for tourists. Therefore, the regional government and wereda administrators in collaboration with concerned bodies have to up grade the 16 kilometer road from Mekane Selam to the Park and develop basic tourist facilities.

4. Training. Locally produced artifacts can be source of income for the local community. The locals are well known with the production of different artifacts from animal horn, basketry, animal wool, animal hides and skin, metal etc. Training has to be given for them so that they can produce these artifacts as per the tourist standards.

5. Scarcity of farming land, shortage of forage and grazing land for livestock are critical problems of the local community. Due to population pressure grazing lands are changed in to cultivated land. In order to get forage for their animals, the people depend on the forest. Modern forage development programs have to be encouraged by the wereda agricultural and rural development office. In addition modern fatting methods have to be launched to the surrounding community (a shift from quantity to quality). Launching

fodder tree planting on unproductive pasture and degraded hillsides will involve a cut and carry system from stands planted. The main objective of this practice is to supplement the low quality and quantity feed sources available for livestock during the dry season with high quality tree leaves and pods so that it helps to reduce the pressure on the forest of the park.

6. Introducing alley cropping. Alley cropping is an agro forestry system in which food crops are grown in alleys formed by hedgerows of trees or shrubs. The hedgerows are cut back at planting and kept pruned during cropping to prevent shading and reduce competition with food crops. When there are no crops, the hedgerows are allowed to grow freely. The primary reasons for introducing alley cropping in to farming system are to improve soil fertility, produce fodder and fuel wood, and aid in soil conservation.

7. Opportunities for income generating activities should be offered to the local people. The major economic activity of the local community depends on crop cultivation and rearing of animals. With the exception of traditional bee keeping, off farm activities are not common. They need different resources from the park. Diversifying their livelihood helps to minimize the pressure on the natural resource. Modern bee keeping, development of highland fruit cultivation, fatting of sheep and cattle can be some possible mechanisms that enable to diversify their livelihood. Creating of an alternative income source and employment opportunities to farmers may partly reduce complete domination of resources of soil and forest.

8. Modern fuel saving stove is not used by local community. Due to shortage of fuel wood, they used animal dung for fuel rather than for fertilizer. Accessing fuel saving stoves helps to minimize the pressure on the forest resource for search of fuel wood. It also minimizes the consumption of wood so that household can use animal dung for fertilizer, which in turn increases productivity of the existing land. Providing alternative sources of energy like biogas, solar, wind, hydro electric power etc for energy than wood, charcoal, dung and crop residue helps to reduce the pressure on the remaining forest resources.

9. In order to avoid disturbance on any faunal and flora species like breeding, feeding, regeneration etc, a strategy should be designed with the consent of the local community on how beekeeping, animal forage and thatched grass could be utilized and managed.

10. Launching afforestation program on a buffer zone. According to the proclamation number 133/2006 on rural land administration and use of the Amhara National Regional State, "*any rural land with 60 percent and above sloppy shall not be used for farming and free grazing. Such type of land should be used for forestry, perennial plants, development of forage, and other similar activities."* The surrounding buffer zone of Borena-Saynt Park is used for farming and/or as a grazing land which aggravates land degradation. Launching afforestation program on the surrounding area of the park enables local communities to have sustainable source of forage, construction materials and fuel wood so that the pressure on the remaining natural forests of the park will decreased.

> "*Private individuals, associations, Government and Non-government organizations and business organizations who want to develop forest shall have the right to obtain rural land in areas designated for forest development free of tax for 25 years"* (Negarit Gazeta No. 56/2007).

11. The biodiversity of the park and culture of the area needs further detail study.

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Annex 1. STRUCTURED QUESTIONNAIRE FOR HOUSEHOLD HEADS

Mekelle University

College of Business and Economics

Department of Management

Title: ***Community based ecotourism development as a viable strategy for sustainable natural resource management: Opportunities and challenges. The case of Borena-Saynt Park in Borena Wereda; South Wollo - Ethiopia.***

The purpose of this questionnaire is to obtain information from household of local community living around the Borena-Saynt Park about personal background information of households, socio-economic conditions of households, conservation and management problems of natural resources, present and prospect livelihood options of households and ecotourism resources that can attract tourists to the study area.

Dear Respondent: This questionnaire has a research purpose. The outcome of this research will help to identify the major ecotourism resources of the forest area, the major problems in relation to sustainable natural resource management and to forward possible solutions. It is believed that it will assist the community, the government and non-government organizations in designing mechanisms to ensure sustainable natural resource management. I confirm you that all data will be treated confidentially and only aggregate and average information will be published. Therefore, I kindly request the cooperation of respondents in filling out the questionnaire accurately considering the importance of the study.

Thank you for your time and cooperation in advance.

Instruction:

Encircle or use tick mark or write the answer as may be necessary to indicate your appropriate response.

I. **Back ground Information**

Region: **Amhara National Regional State**

Zone: **South Wollo Administrative Zone**

Wereda: **Borena wereda**

Kebele: _____Village_____Household Code Number_____

Name of Enumerator _____Date _____ Signature_____

Checked by: supervisor Name_____Date_____Signature_____

II. Demographic Characteristics of Household Head

1. Type of household: 1. Male headed 2. Female headed
2. Age in years: 1. 18-30 2. 31-60 3. 61 and above
3. Marital Status: 1. Married 2. Never married or single 3. Divorced 4. Widowed 5. Separated
4. Total Household size/ Family Size (including adults and children) _____ (01)
5. Literacy level of the household head:
   1. Illiterate 2. Write or/and read only 3. Primary School (1-8)
   4. Secondary School (9-12) 5. 12 complete and above
6. How many years have you lived in the area?
   1. Less than one year 2. 1-5 years 3. 6-10 years 4.More than 11 years

III. Socioeconomic situation of the house hold A. Land holding and livelihood situation

1. What is the major (primary) occupation/livelihood of the household?
   1. Crop production 2. Animal husbandry 3. Mixed Farming 4. Trading
   5. Fuel wood selling 6. Tailor 7. Handicraft/ Blacksmiths/ carpenters
   8. Local liquor brewers 9. Daily laborer 10. Apiculture (bee farming)
   11. Other (specify)_____
2. What is your secondary occupation? (Rank the first three based on their importance)
   First_____ Second_____ Third_____
   1. Crop production 2. Animal husbandry 3. Mixed Farming 4. Trading
   5. Fuel wood selling 6. Tailor 7. Handicraft/ Blacksmiths/ carpenters
   8. Local liquor brewers 9. Daily laborer 10. Apiculture (bee farming)
   11. None 12. Other (specify)_____
3. Do you have your own agricultural land? 1. Yes 2. No
4. If your answer for **question number 3 is "yes"**, total size of your landholding in 'Gemed' currently is: _____ (Gemed locally used measurement of land=16 gemed is equivalent to 1 hectare)
5. What is/are the major problem/s that the households faces regarding with agricultural activity?
   (Identify the first three based on their severity) First_____Second_____ Third_____
   1. Shortage of farmland 2. Soil fertility reduction 3. Scarcity of grazing land
   4. Expensiveness of agricultural inputs (fertilizer/ improved seeds) 5. Market problem for products 6. Other (specify) _____

6. What is/are the most commonly used type/s of energy for cooking in your household?

(State the first three based on their importance) First_____Second_____ Third_____

1. Wood (01) 2. Shrubs and leaves (02) 3. Crop residue (03) 4. Dung (04)

5. Charcoal (05) 6. Kerosene (06) 7. Other, Specify_____

7. What is the major source of wood for **fuel-wood** for the household?

1. Own plantation/ homestead 2. *Kebele/*Community forest 3. State or organizations' forest

4. Other (specify) _____

8. Does any member of the household make charcoal? 1. Yes 2. No

9. If the answer for question number **8 is "yes"** what is the major source of wood for charcoal making?

1. Own plantation/ homestead 2. *Kebele/*Community forest 3. State or organizations' forest

4. Other (specify) _____

10. What is the major material used to construct the **wall** of your house and house for livestock?

1. Wood / mud 2. Stone &mud 3. Stone and lime mortar 4. Wood & thatch

5. Other (Specify) _____

11. What is the major material used for the construction of the **roof?**

1. Wood &Corrugated iron sheet 2. Wood, stone and mud 3. Wood and Thatch

4. Other (Specify) _____

12. What is the major source of wood for **construction purpose** for the household?

1. Own plantation/ homestead 2. *Kebele/*Community forest 3. State or organizations' forest

4. Other (specify) _____

13. Are you using merit or fuel saving stoves for cooking? 1. Yes 2. No

14. If your answer for **question number 13 is "No",** what is/are the determinant factor/s.

1. Lack of access 2. Financial constraint 3. Lack of knowledge 4. All

5. Others, specify_____

B. <u>Livestock resource</u>

15. Do you have your own domestic animals? 1. Yes 2. No

16. If the answer for **question number 15 is "yes"**, what type of and how many livestock does the household rear? 1. Ox _____ 2. Cow _____ 3. Sheep ____ 4. Goat _____

5. Donkey _____ 6. Horse _____ 7. Mule _____ 8.other_____

17. If yes for **question number 15,** what is/are the main source/s of grazing land? (Mention the major three sources) First_____ Second_____third_____

1. Own grazing land 2. Government land 3. Land rented 4. Other PA /Wereda

5. Cut and carry grass or fodder plants from forests owned by government or/and communal land

6. Communal land 7. Other, Specify_ _____

18. Which of the following problem/s do you encountered in relation to livestock?

Major problems	Yes (1)	No (2)	Remark
1. Shortage of forage			
2. lack of drinking water for livestock			
3. overgrazing by free grazing animals			
4. shortage of grazing land			
5. Others(specify)			

19. How is the size of the grazing area that the household uses since the last five years (Both private and free grazing land? 1. Increased 2. Decreased 3. There is no change

20. If your answer for **question number 19 is "decreased**", what do you think is/are the major reason/s?

1. Grazing land changed in to farm land due to shortage of cultivable land
2. Due to high population growth & land reallocation 3. Grazing area covered by forests
4. All except 3 5. Other (specify)_____

IV. <u>Questions related with Natural Resource conservation and degradation (forest and wildlife)</u>

1. In your opinion, is there any change in the size of the natural forest of the park for the last five years?

1. Increased 2. Decreased 3. No change 4. I do not know

1. If your answer for **question number 1 is "decreased"**, what do you think is/are the basic the causes?

Cause	Yes (1)	No (2)	Remark
1. Expansion of settlements into the forest			
2. Expansion of agricultural activity towards the forest			
3. Overgrazing			
4. Removing of fuel and construction wood from forest			
5.high demand of commercial wood like pit saw			
6.forest fire			
7.fuel wood for market			
8. Others, specify			

3. Are there natural resources you need from the park? 1. Yes 2. No

4. If your answer for **question number 3 is "yes",** identify the major resources.

Resource	Yes (1)	No (2)	Remark
1. Forest wood for fuel and construction			
2. Water for livestock			
3. Water for irrigation			
4. Wild animals for their meat and skin			
5. Grass and leaves for animal forage			
6. Land for farming			
7. For bee keeping (apiculture)			
8.wood for pit saw for market			
9. fuel wood for market			
10.Wood for charcoal for market			
11. Utilities for farming and household			
12.Others, specify			

5. What is the level of environmental degradation in your locality?

Type of environmental degradation	Level of degradation			
	None (1)	Low (2)	serious (3)	Very serious(4)
1. Deforestation(cutting of trees)				
2. Over grazing				
3. Wildlife depletion(hunting)				

6. Do you think that deforestation is an environmental Problem in your area? 1. Yes 2. No

7. Are you responding to this problem (destruction of forest resources)? 1. Yes 2. No

8. If your answer for **question number 7 is "yes**", how are you trying to solve deforestation problem in your locality?

Mitigating mechanism	Yes (1)	No (2)	Reason if your answer is "No"	Reasons(determinant factors)
1. By planting trees				1. shortage of farm land 2. financial constraint 3. lack of knowledge
2. By using modern source of energy				
3. By using control grazing				
4. By applying modern farming				
5. Other, Specify				

9. Is there any illegal encroachment to the Park by people from your *Kebele*? 1. Yes 2. No

10. If your answer for **question number 9 is "yes",** local communities encroach into the forest in order to serve mainly for:	Yes (1)	No (2)	Remarks
1. Fuel wood from the forest			
2. Construction wood from the forest			
3. Cut trees for charcoal production			
4. Cut trees for pit sawing			
5. Encroach into forest to graze livestock			
6. Cut and carry grass for livestock from the forest			
7. land for farming			
Other-specify			

11. If the answer for **question number 9 is yes**, who do illegal encroach into the forest? (Mention the major two based on their degree of involvement) First_____Second_____third_____

1. Landless people 2. People who have connections with timber merchants in nearby towns
3. People who could not produce what the household requires for a year
4. The rich ones in the kebele 5. Women 6. The community as a whole
7. Other (specify) _____

12. Did you use resources form the park legally for the last five years**?** 1. Yes 2. No

13. If your answer for question number **12 is "yes**", specify the resources and the mechanism.

1. Cut and carry of forage for livestock 1.Yes 2. No
2. Cut and carry of thatched grass (for house) 1.Yes 2. No
3. Fuel wood collection from dead trees 1.Yes 2. No
4. Wood for construction 1.Yes 2. No
5. Wood for agricultural activity materials 1.Yes 2. No
6. Other (specify)

14. Do you have you information about what does tourism mean and its economic as well as environmental contribution for sustainable natural resource management?

1. Yes I have the information 2. No, I don't have any information

15. If your answer for question number **14 is "yes"**, what was your source of information?

1. Media (radio, newspaper etc) 2. Kebelle development agents and/or administrators
3. Experts from wereda 4. Local and/or international Non Governmental Organizations
5. Others (specify)_____

Annex 2. SEMI-STRUCTURED FOCUS GROUP DISCUSSION QUESTIONNAIRES FOR KEY INFORMANTS

Title: ***Community based ecotourism development as a viable strategy for sustainable natural resource management: opportunities and challenges. The case of Borena-Saynt Park in Borena Wereda; South Wollo - Ethiopia.***

The purpose of this focus group discussion is to obtain information from experts and managers from **kebelle development agents, kebelle administrators and kebelle youth association leaders as well as agricultural office, tourism office, information office** at different levels about management problems of the natural resources and ecotourism potentials including the alternative livelihoods options that contributed to sustainable utilization of natural resource of Borena-Saynt Park. Your genuine answers are very crucial for the success of this paper; so I kindly request to give correct and accurate information.

Dear Participants: This discussion has a research purpose. The outcome of this research will help to identify the major ecotourism resources of the forest area, the major problems in relation to sustainable natural resource management and to forward possible solutions. I confirm you that all data will be treated confidentially and only aggregate and average information will be published. Therefore, I kindly request your cooperation to participate with the discussion actively considering the importance of the outcomes of the study.

Thank you for your time and cooperation in advance.

A. CONCERNED BODIES FROM AGRICULTURAL OFFICE, TOURISM OFFICE, INFORMATION OFFICE and KEBELLE DEVELOPMENT AGENTS

I. Personal Background Information about informants/interviewers.

1. Name of organization_____

2. Occupational status: 1. Government 2. Private 3. NGO 4. others, specify----------

3. Respondents' 3.1. Age: 1. less than 30 2.31-45 years 3. Greater than 46 years

3.2 Sex: 1. Male 2. Female

3.3 Educational status: 1. below 12 grade 2. Certificate 3. Diploma

4. First degree 5. Second degree and above

3.4. Designation: _____

3.5 Years of working experience:

1. Less than 5 years 2. 5-10 years 3. 11-15 years 4. Greater than 16year

II. Assessment of the problems with Natural Resource Management and mitigation measures

1. What is the extent of local participation in natural resource (mainly soil and forest) conservation in the study area?

2. To what extent does the following socio- economic aspects influences the resources of park?

Human habitations (expansion of settlements	Over grazing by cattle
Fuel wood and construction wood removals	Hunting
Forest fire	High demand of commercial wood
Expansion of agricultural activity towards the forest	Others

3. Is the area (Borena-Saynt Park) has any potential for the development of community based ecotourism? 1. Yes 2. No

4. **If yes**,

- List natural ecotourism resources (Flora, fauna, caves, waterfalls, scenery etc)
- List cultural and historical eco tourism resources (traditional songs and dances, local handicrafts, Religious sites, historical sites etc)
- Specify the major types of local products and services that the local community can sell for tourists so that they can earn income when there is development of ecotourism.

5. What major opportunities are there for the development of community based ecotourism in Borena-Saynt Park?

6. What major challenges (problems) are there for the development of community based ecotourism in Borena-Saynt Park? 6.1 Communications

6.2 Transportation

6.3 Facilities (lodges, hotels, guiders travel agents etc)

6.4 others

7. Do you think that enough promotion work has been done to publicize park? What were the major means of promotion? Radio/television/news paper/poster/journals/website/others

8. What are the different livelihood options that can be suggested for the local people? What efforts have been undertaken to diversify the livelihood of the local community living around the forest areas?

9. Do you think that ecotourism development can be a viable strategy for sustainable natural resource

management? If so, how? How the local community can be beneficiaries from the development of ecotourism?

10. Do you think that protecting the forest resource using employed guards appropriate mechanism for sustainable natural resource management? What is the advantage of community based natural resource management compared with government conservation mechanism?

B. KEBELLE ADMINISTRATORS AND YOUTH ASSOCIATION LEADERS

1. Which environmental problems are very common in and around Borena Saynt Park?

2. What do you think are the possible causes of environmental degradation in your locality?

3. Are there any governmental or nongovernmental organizations which are working on environmental issues mainly forest resource? If yes, what are their contributions to the rural community?

4. In your opinion, what are the major constraints to implement conservation activities in your locality?

5. What is the status of knowledge and practice of the community about the forest resource conservation? (What is the level of people's awareness about environmental problems?)

6. What is/are the major problem/s that the households faces regarding with agricultural activity?

7. Do you think that protecting the forest resource using employed guards appropriate mechanism for sustainable natural resource management?

8. To what does the following socio- economic aspects influences the forest resource of Denkoro?

Human habitations (expansion of settlements	Over grazing by cattle
Fuel wood and construction wood removals	Hunting
Forest fire	High demand of commercial wood
Expansion of agricultural activity towards the forest	Others

9. Do you think that local communities have a sense of ownership on Denkoro natural forest resource? If not, what is its impact on sustainable natural resource management?

Annex 3. SEMISTRUCTURED QUESTIONNAIRE FOR INTERVIE (ELDERS)

1. Do you think that deforestation is an environmental Problem in your area? 1. Yes 2. No

2. If your answer for question number 1 is "**yes**", what are the major causes?

Major causes	Yes (1)	No (2)	Remark
1. Cutting of trees for fuel wood			
2. Expansion of agricultural land to the forest area			
3. High demand of commercial wood			
4. Expansion of settlement to the forest area			
5. Over grazing			
6. High demand of wood for construction			
7. forest fire			
Other, specify			

3. What is your observation in your life time regarding:-

   a. The forest resource of Borena-Saynt Park (does its size increased/decreased/ no change). What do you think are the cause for such change in size?

   b. Agricultural land size per person (does its size increased/decreased/ no change). What do you think are the cause for such change in size? Its implication in productivity?

   c. Grazing land size (does its size increased/decreased/ no change). What do you think are the cause for such change in size?

4. Do you have observed any land use change?

   From grazing land to agricultural land

   From forest land to agricultural land

   From agricultural land to grazing land

ANNEX 4. FORMATS USED TO COLLECT SECONDARY DATA

Secondary information to be gathered from Borena wereda Agricultural office

Title: Community based ecotourism development as a viable strategy for sustainable natural resource management: Opportunities and challenges. ***The case of Borena-Saynt Park in Borena Wereda; South Wollo - Ethiopia.***

The purpose of this research is to gather information about natural resource management problems and ecotourism potential Borena-Saynt Park**.** The outcome of this research will help to identify the major ecotourism resources of the forest area, the major problems in relation to sustainable natural resource management and to forward possible solutions. Therefore, I kindly request your cooperation in filling out the questionnaire accurately considering the importance of the study. I confirm you that all data will be treated confidentially and only aggregate and average information will be published. **Thank you for your time and cooperation in advance**

Please provide accurate information for the following issues

1. Total area of the Park in square kilometers_____
2. Total number of guards of the natural state forest:

Permanently employed_____Temporally employed_____ Total_____

3. Monthly salary of the guards in Ethiopian birr: permanent_____ Temporary_____
4. Major types of mammals identified so far in the forest:

4.1 Endemic mammals			4.2 Non-endemic mammals		
Amharic Name	English Name	Scientific Name	Amharic Name	English Name	Scientific Name

5. Major type of birds identified so far in the Park:

5.1 Endemic Birds			5.2 Non-endemic Birds		
Amharic Name	English Name	Scientific Name	Amharic Name	English Name	Scientific Name

6. Major type of flora identified so far in the park:

6.1 Endemic flora			6.2 Non-endemic flora		
Amharic Name	English Name	Scientific Name	Amharic Name	English Name	Scientific Name

7. Cases reported to wereda agricultural office regarding with the following issues from kebelle Development agents, forest guards and kebelle administrators for the last three years (1999-2001).

No	Issue	Number of cases reported	Action taken
1	Cutting of trees for fuel wood and construction		
2	Cutting of trees for pit saw		
3	Cut and carry of grass		
4	Expansion of grazing land toward the forest area		
5	Expansion of agricultural land toward the forest area		
6	Illegal charcoal production from the forest		
7	Forest destruction by fire		
8	Illegal hunting or killing of wild animals		
9	Other cases		

8. Total number of population directly share boundary with Borena-Saynt Park in Borena wereda.

Kebelle	Population Data		Villages which directly share boundary with the park			Remark
	Total population	Total number of households	Number of villages	Total population	Number of house holds	
Jelisa Libanos						
Hawey Betaso						
Dega Dibi						
Abu						
Fatijaneberu						
Miskabie						
Chirocherkos						
Anferfra						
Chirokadis						
Total						

ANNEX 5. DEMOGRAPHIC CHARACTERISTICS OF SAMPLED RESPONDENTS

Type of household head

	Frequency	Percent
Male headed	135	84.4
Female headed	25	15.6
Total	160	100.0

Age of the household head

	Frequency	Percent
18-30	30	18.8
31-60	103	64.4
61 and above	27	16.9
Total	160	100.0

Marital status	N	%
Married	124	77.5
Never married or single	3	1.9
Divorced	12	7.5
Widowed	16	10.0
Separated	5	3.1
Total	160	100.0

Total household size		N	%
	1.00	4	2.5
	2.00	6	3.8
	3.00	17	10.6
	4.00	24	15.0
	5.00	29	18.1
	6.00	52	32.5
	7.00	14	8.8
	8.00	8	5.0
	9.00	4	2.5
	10.00	1	.6
	11.00	1	.6
	Total	160	100.0

Total household size	N	Min	Max	Mean
	160	1.0	11.0	5.2437

Educational levels of the house hold

	N	%
Illiterate	75	46.9
Write or/and read	41	25.6
Primary(1-8)	38	23.8
Secondary (9-12)	5	3.1
12 complete and above	1	.6
Total	160	100.0
Years lived in the area	N	%
More than 11 years	160	100.0

Land ownership		N	%
Valid	Yes	143	89.4
	No	17	10.6
	Total	160	100.0

Total land holding in *Gemed* (16*Gemed* equivalent to 1 hectare

	N	Min	Max	Mean
Total land holding	143	2.00	24.00	9.0909

Ownership of domestic animal		N	%
Valid	Yes	155	96.9
	No	5	3.1
	Total	160	100.0

	N	Mini	Maxi	Mean	Std. Deviation
Total number of ox	143	1.00	4.00	1.9231	.79680
Total number of cow	152	1.00	6.00	2.5461	1.16709
Total number of sheep	152	1.00	30.00	10.8684	5.35703
Total number of goat	67	1.00	13.00	4.5821	2.57699
Total number of donkey	121	1.00	4.00	1.2397	.57771
Total number of horse	60	1.00	2.00	1.0500	.21978
Total number of mule	11	1.00	1.00	1.0000	.00000

Annex 6. Contribution of Tourism to Achieving the Millennium Development Goals

Goal	Contribution of tourism
1. Eradicate extreme poverty and hunger	(a) Tourism stimulates economic growth both at the national and local levels and promotes the growth of the agricultural, industrial and service sectors; (b) Tourism provides a wide range of employment opportunities easily accessible by the poor. Tourism businesses and tourists purchase goods and services directly from the poor or enterprises employing the poor. This creates opportunities for micro, small and medium-sized enterprises in which the poor wvgx1can participate; (c) International and domestic tourism spreads development to poor regions and remote rural areas of a country that may not have benefited from other types of economic development; (d) The development of tourism infrastructure can benefit the livelihood of the poor through improvement in tourism-linked service sectors, including transport and communications, water supply, energy and health services
2. Achieve universal primary education	(a) The construction of roads and tracks to remote areas for tourists also improves access for school-age children and for teachers; (b) Tourism can help local resource mobilization, part of which can be spent on improvement of education facilities.
3. Promote gender equality and empower women	(a) The tourism industry employs a high proportion of women and creates micro enterprise opportunities for them. It promotes women's mobility and provides opportunities for social networking.
4. Reduce child mortality	(a) The construction of roads and tracks to remote areas for tourists also improves access to health services; (b) Revenues accruing to national and local governments through taxes on the tourism industry can be used to improve health services and nutrition for young children and their mothers; (c) Tourism raises awareness about HIV/AIDS issues and supports HIV/AIDS-prevention campaigns;
5. Improve maternal health	
6. Combat HIV/AIDS, malaria and other diseases	

7. Ensure environmental sustainability	(a) Tourism can generate financial resources for conservation of the natural environment; (b) Tourism raises awareness about environmental conservation and promotes waste management, recycling and biodiversity conservation;
8. Develop a global partnership for development	(a) Tourism contributes to the socio-economic development of least developed countries, landlocked countries and island developing countries through foreign exchange earnings and the creation of job opportunities; (b) Tourism stimulates the development of the transport infrastructure, which facilitates access to and from the least developed countries, landlocked countries and island developing countries; (c) Tourism stimulates internal and external trade and strengthens supply chains; (d) Tourism promotes the integration of isolated economies with regional and global flows of trade and investment; (e) Tourism reduces the burden on the public exchequer through implementation of public-private initiatives; (f) Tourism creates decent and productive work for youth; (g) Tourism provides opportunities for bilateral, multilateral and sub regional cooperation among countries; (h) Information technologies play an important role in integrating tourism enterprises into global tourism markets.

Source: UNESCO (2007:9-10)

Annex 7. Fauna Recorded in Borena-Saynt Park

Scientific or Botanic Name	**Common Name**	**Source**	**Remark**
Arvicanthus abyssinicus	Grass Rat	1	
Canis aureus	Common Jackal	124	
Canis simensis	Ethiopian wolf (key kebero)	124	Endemic
Canis undustus	Side striped Jackal	12	
Cercopethicus aethiops	Grivet Monkey(Tota)	124	
Colobus monkey(abyssinicus)	Guereza	1234	
Crocidura fumosa		12	
Crocuta crocuta	Hayna	124	
Felis caraca	Caracal (yedalga Ambesa	1234	
Felis serval	Serval cat	12	
Genetta abyssinica	Abyssinian Genet	12	
Histrix cristata	Crested porcupine(Jart)	124	
Ichneumia albicauda		12	
Lepus starckii	Starck`s Hare(Tinichel)	1234	Endemic
Lophuromis flavopunctatus	Harsh Furred Rat	12	
Mellivera capensis	Ratel(Araji)	124	
Oereotragus oreotragus	Klipspringer (Sesa)	1234	
Otomys typus	Swamp Rat	12	
Panthera pardus	Leopard (Nebr)	123	
Papio anubis	Olive Baboon	124	
Papio hamadryas	Hamadryas Baboon	12	
Procava capensis	Rock hyrax(Shikoko)	1234	
Sylvicapra grimmia	Grey Duicker(midaqo)	1234	
Stenocephalomice griesicauda	Gray Tailed Rat	12	Endemic
Tachyorycytes splenden	Common Mole Rat	124	
Theropithecus gelada	Gelada Baboon	124	Endemic
Tragelaphus scriptus	Common Bushbuck	124	
Tragelaphus scriptus menlikii	Menelik bush buck(Dikula)	124	Endemic

Souce: 1. Woldegabriel(2003) 2. Lakew and et.al (2007)

3. Negash (2002) 4. PaPDA (2007)

Annex 8. Birds (Apifauna) of Borena- Saynt Park

Name	Source	Remark
Abyssinian Cat bird (*Parophasma galinieri)*	1234	Endemic
Abyssinian Ground-thrush (*Zoothera piaggiae)*	2	
Abyssinian long claw **(***Macronyx flavicollis*)	34	Endemic
Abyssinian Roller	1	
Abyssinian Slaty Flycatcher (*Dioptrornis chocolatinus)*	2	
African Hill Babbler *(Pseudoalcippe abyssinica)*	2	
African Hoope	1	
Agur bazard	1	
Baglafecht Weaver (*Ploceus baglafecht*)	12	
Black Breasted Glossy Starling	1	
Black headed siskin(*Serinus nigriceps*)	124	Endemic
Black-winged Lovebird (*Agapornis taranta*)	1234	Endemic
Brown Woodland-warbler (*Phylloscopus umbrovirens*)	2	
Brown-rumped Seedeater (*Serinus tristriatus*)	2	
Cape Rook	1	
Capped weaver	1	
Chestnut Napped Francolin	1	
Cinnamon Bracken Warbler	1	
Cliff chat	1	
Common Kestrel	1	
Corvus albus (Paid Crow)	15	
Crested Francolin	1	
Crested lark	1	
Dark-headed Oriole (*Oriolus monacha*)	2	
Dusky Turtle-dove (*Streptopelia lugens)*	12	
Dwarf Raven	1	
Egyptian vulture	1	
Emerald Cuckoo	1	
Ethiopian Siskin (*Serinus nigriceps*)	2	
Fantailed raven	1	
Fiscal Shrinke	1	
Golden backed wood-peckers or Abyssinian Woodpecker (*Dendropicos abyssinicus*)	1234	Endemic
Green Wood Hoopoe	1	
Grey Headed Sparrow	1	
Grey Horn Bill	1	
Gypaeatus barbatus (Lammergeyer)	15	
Hardwood francolin (*Francolinus harwoodi*)	124	Endemic
Hooded Vulture	1	
Lanner falcon	1	

Montane White-eye (*Zosterops poliogastrus)*	2	
Moorland Chat (*Cercomela sordida*)	2	
Nyanza Swift (*Apus niansae)*	2	
Olive Sun Bird	1	
Red Capped Lark	1	
Red Tailed Chat	1	
Red Winged Starling	1	
Rueppell's Robin-chat (*Cossypha semirufa)*	2	
Ruppell's Chat (*Myrmecocichala meleana*)	3	Endemic
Senegal Caucal	1	
Slender-billed Starling (*Onychognathus tenuirostris*)	2	
Speckled Pigeon	1	
Streaky Seedeater (*Serinus striolatus*)	12	
Swainson's Sparrow (*Passer swainsonii*)	2	
Tacazze Sunbird (*Nectarinia tacazze)*	12	
Tawny Eagle	1	
Thick-billed Raven (*Corvus crassirostris*)	124	Endemic
Wattled Ibis (*Bostrychia carunculata*)	245	Endemic
White browned Caucal	1	
White headed vulture	1	
White Throated seed Eater(*Serinus flavigula*)	14	
White-backed Tit (*Parus leuconotus*)	124	Endemic
White-billed Go-away Bird	1	
White-billed Starling (*Onychognathus albirostris)*	124	Endemic
White-cheeked Turaco (*Tauraco leucotis*)	2	
White-collared Pigeon (*Columba albitorques*)	1234	Endemic
Yellow Vented Bulbul	1	
Yellow-Fronted Parrot (*Poicephalus flavifrons*)	3	Endemic

Source: 1. Lakew Berhanu & et.al. (June 2007) 2. Bird Life IBA Fact Sheet (2008)

3. Abate Ayalew (2003) 4. Urban (1987) 5. PaDPA (2007)

Annex 9. Identified Flora of Borena Saynt Park

Botanical name	Amharic name	Source	T=Tree S=shrub	Remark
Acacia abyssinica	Girar	123	T	
Acanthus sennii	Shekori	12	S	Endemic
Allophylus abyssinica	Bar Embis	1234	T	
Apodytes dimidiata	Dong	1245	T	
Arundinaria alpina	Kerkeha	4	S	
Asparagus africanus	Yeset kest	123	S	
Bersama abyssinica	Azamir	1235	T/S	
Buddelja polystachya	Nech Anfar	124	S	
Calpurnia aurea	Digita	1	S	
Cappris tomentosa	Gumero	1	S	
Carduus sp.	Yeahya Eshoh	1	S	
Carissa edulis	Agam	1234	S	
Celtis africana	Kawot	12	T	
Clerodendron alatum	Buyte	1	T	
Conzya hypoleuca	Qulsh	1	S	
Cordial africana	Wanza	4	T	
Croton macrostachyus	Bisana	12345	T	
Discopodium penninervium	Ameraro	1234	S	
Dodonaea anguistoflia	Kitikita	4	S	
Dombeya torrida	Wulkfa	1245	T	
Dovyalis abyssinica	Koshim	124	T/S	
Echinops kebercho	Kebercho	2	S	Endemic
Echinops longistetus		2		Endemic
Ekebergia capensis	Sembo or lol	12345	T	
Embelia schimperi	Enkoko	1	S	
Erica arborea	Asta	12345	T/S	
Euclea schimperi	Dedeho	4	T	
Euphoria dumalis		2		Endemic
Euphorbia ampliphylla (abyssinica)	Kulkual	1345	T	
Euphorbia shimperiana	Antrfa	1	T/S	
Euphorbia tirucalli	Kinchib	4	S	
Festuca spp	Guassa	5		
Ficus sur	Sholla	134	T	
Galiniera saxifraga	Wude or Solie	134	T	
Hageniaia abyssinica	Kosso	12345	T	
Hydria salicifolia	Shinet	4	T	
Hypericum revolutum	Amja	12345	T/S	
Iimenia americana	Inkoy	4	S	
Lobelia rhynchopetalum	Jibra	2		Endemic
Jacaranda mimosifolia	Yetbemenjazaf	4	T/S	
Jasminum abyssinicum	Enchlbe	12	S	
Juniperus procera	Tid	12345	T	
Kniphofia folisa		2		Endemic

Knophojia isotifolia		2		
Laggera tomentosa	Alashume	1	S	
Maesa lanceolata	Akelawe	124	T	
Maytenus arbutifolia	Kombel	1	T/S	
Maytenus gracilipes	Atat	14	S	
Morus mesozygia	Injori	4	S	
Myrica salicifolia	Shinet	125	T	
Myrsine (Rapanea) melanophloeos	Gewra	1	T	
Myrsine africana	Kechemo	12	S	
Nuxia conjesta	Asquar	12	T	
Olea europaea	Woira	12345	T	
Olinia rochetiana	Tife	145	T	
Osyris quadripartita	Keret	13	T/S	
Phytolacca dodecandra	Endod	124	S	
Phoenix reclinata	Selen or zembaba	13	S	
Pittosporum virdiflorum	Solae	1	T	
Podocarpus (Afrocarpus) falcatus	Zigba	1235	T	
Prunus africana	Tikur Enchet	1245	T	
Rhus abyssinica	Tatesa	1	S	
Rhus glutinosa	Embis	15	S	
Rosa abyssinica	Kega	1245	S	
Rubus apetalus	Enjori	13	S	
Rubus steudneri	Gurarba	1	S	
Rubus volkensii	Encholla1	13	S	
Rumex nervosus	Emboacho	1	S	
Schefflera abyssinica	Getem	5		
Solanecio gigas	YeshikokoGomen	12	S	Endemic
Solanum benderianum	Enkulti	1	S	
Solanum marginatum	Zerch Emboay	1	S	
Tacazzea confert	Kuande	1	S	
Urera hypselodendron	Lankuso	1	S	
Vernonia amyygdalina	Girawa	4	T	
Vernonia bipontini	Yetija limich	1	S	

Source: 1.Abate (2003) 2. Woldegabreil (2003) 3. Negash (2002)
4. Borena wereda Agricultural and rural development office (files) 5. PaDPA(2007)